Swiss Project for Horticultural Promotion in Kosovo

Promoting horticulture in Kosovo

Pristina, May 2006

Project financed by the Swiss Government
Preface

The Swiss Government initiated the *Swiss Project for Horticultural Promotion in Kosovo* early in 2001. It recognised the potential of the horticulture sector to contribute considerably to the generation of jobs and income in the rural areas of Kosovo - essential ingredients for the future stability and prosperity of the area.

The Project is funded through the Swiss Federal Office for Migration (FOM), supervised by the Swiss Agency for Development and Cooperation (SDC) and implemented by Intercooperation (IC) - a Swiss Foundation for Development. The budget for the first three phases, up to December 2006, has amounted to € 4.5M.

The Project’s approach has been one of value chain development regarding vegetables, top fruit, soft fruit, ornamentals and herbs & teas. It has been working with producers, nurseries, traders, input suppliers and service providers to bring new products to the market and to improve the efficiency of the production and marketing chains for existing products.

It started supporting the scaling up of promising value chains as from 2005 - a move that has illustrated the very large contribution that a re-invigorated horticulture sector can make to the employment and income situation in Kosovo.

This document presents the approaches utilised by the Project, the achievements up to the end of 2005 and the potential of the scaling up of successful value chains. It also identifies other areas warranting investment.

The document constitutes a substantial extract from *The Internal Review of SPHPK Activities 2001-2005, January 2005* - the content list of which is presented as Annex M. This current version incorporates corrections made to the March 2006 version.
Contents

Preface
Acronyms and glossary
Map of SPHP-K clients
Summary
1. Context  ....  .... 9
2. General strategies  ....  .... 11
3. Input supply and production strategies  ....  .... 21
4. Post-harvest and marketing strategies  ....  .... 28
5. Strategy 2005/6 and progress  ....  .... 32
6. Results and potential impact  ....  .... 36
7. Future perspectives  ....  .... 40

ANNEXES
  A: Documentation  ....  .... 46
  B: Vegetables  ....  .... 48
  C: Soft fruit  ....  .... 64
  D: Top fruit  ....  .... 70
  E: Ornamentals  ....  .... 76
  F: Herbs & teas  ....  .... 82
  G: Integrated production  ....  .... 86
  H: Post-harvest  ....  .... 88
  I: Marketing  ....  .... 92
  J: Machinery  ....  .... 101
  K: Gender & minorities  ....  .... 105
  L: Assisted scaling up - apples and strawberries  ....  .... 110
  M: Contents of Internal Review of SPHPK Activities 2001-05  ....  .... 114
Swiss Project for Horticultural Promotion-Kosovo

Acronyms and glossary

Acronyms

AYRP  All Year Round Production
CABI  CAB International
COOF  Coordination Office
CTA  Chief Technical Advisor
CTL  Co Team Leader
€  Euro
EAR  European Agency for Reconstruction
EPPO  European and Mediterranean Plant Protection Organisation
FAO  Food and Agriculture Organization of the United Nations
FIBL  Research Institute for Organic Farming
FOM  Swiss Federal Office for Migration
GH  Greenhouse
H  Hour
ha  Hectare, 10,000 m²
HPG  Horticultural Promotion Group
IC  Intercooperation
ICM  Integrated Crop Management
IOBC  International Organisation of Biological Control
IP  Integrated Production
KBS  Kosovo Business Support
KCBS  Kosovo Cluster Business Support
LWF  Lutheran World Federation
MAFRD  Ministry of Agriculture, Forestry and Rural Development
MFU  Ministry Field Unit
MFI  Micro Finance Institution
MOU  Memorandum of Understanding
NGO  Non-Governmental Organization
PH  Post Harvest
PO  Project Officer
ProDoc  Project Document
PTA  Participatory Technological Agreement
PUM  Netherlands Senior Experts
SASS  Strengthening Advisory and Support Services
SARK  Support Agriculture Rehabilitation of Kosovo
SDC  Swiss Agency for Development and Cooperation
SME  Small and Medium Enterprise
SOE  Socially Owned Enterprise
SPHP-K  Swiss Project for Horticultural Promotion in Kosovo
SP  Service Provider
TA  Technical Adviser
TOR  Terms of Reference
UNMIK  United Nations Mission in Kosovo
YPO  Yearly plan of Operation

Glossary

Agro-kombinats  Big state owned companies containing departments involved in production, processing and marketing
Anamorava  Eastern part of Kosovo comprising municipalities of Gjilan, Kamenica and Viti
Determinant  Plants with growth of a predetermined and limited extent
Dukagjini  SW Kosovo comprising municipalities of Istog, Peja, Deqan, Gjakova, Rahovec and Prizren
Fertigation  The application of nutrients through irrigation systems is called “fertigation,” a contraction of fertilization and irrigation.

Generative rootstock - rootstock propagated from the seed and which produces a vigorous plant;

Indeterminant  Plants with growth that is undetermined and strongly affected by environmental factors
Mulch  Weed controlling material either synthetic (plastic) or organic (wood chips, grass, gravel…)
Scaling up  Scaling up is the process whereby a successful value chain expands to benefit a greatly increased number of stakeholders
Value chain  describes the full range of activities, which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), to delivery to the final consumer

Vegetative rootstock - rootstock propagated from cuttings and which produces a less vigorous plant
Summary

A sector in forced transition

Horticulture producers in Kosovo used to be part of the Yugoslav command economy and were responsible for producing a limited range of products for a captured market of 22 million. Their situation has changed out of all recognition. Their ‘local’ market has been reduced to just 2 million - and one that demands a wide range of products throughout the year but that is already being supplied by an efficient and well-tested system of imports. The producers are finding that cultivating crops is no longer enough – they now have to sell their products – and, more difficult still, they have to produce what the market demands – and when it demands it. The context in which the producers have operated has changed dramatically leaving them ill-equipped and unprepared to compete – both individually and collectively.

If the market has changed abruptly – so too have the sector’s resources. The troubles have not only disrupted social systems but also decimated fixed assets. The area under apple orchards, for example, has collapsed from over 12,000 ha in 1985 to less than 100 in 2001 – and what remains largely comprises aging trees of old varieties. A similar situation is reported with strawberries – once an important crop covering 130 ha – it had diminished to practically zero in 2001. Much of the ‘socially-owned’ land and infrastructure (including the substantial processing capacity) lies abandoned – waiting for legal processes to release them onto the market.

As frustration builds up in the population with the slow pace of resolution of Kosovo’s status – the rapid increase in income and employment is seen by all as crucial to the area’s stability. The re-establishment of horticulture is widely considered to offer one of the best possibilities of achieving such an objective.

Swiss intervention

The Project for Horticultural Promotion – Kosovo (SPHP-K) was launched in 2001 with the goal: ‘In a dynamic horticultural sector, the production, processing and commercialisation of an increasing range of high quality vegetables and fruits for the internal and external market are an important source of income and of attractive rural employment in the Province’.

The Project was extended over three phases and is due to terminate at the end of 2006 after six years. The Federal Office of Migration provided a budget amounting to CHF6.9M on a declining basis – with 0.6M being available for the last year. The Project is supervised by SDC and managed by Intercooperation with ten staff.

Strategy

In order to contribute to the promotion of income and employment in rural areas, the Project evolved a strategy of identifying the most potential value chains (existing or proposed) that could benefit from promotion - and facilitating the establishment or strengthening of one or more of the weakest links. In this way it has been helping to create or re-establish productive enterprises covering vegetables, soft fruit, top fruit, ornamentals and herbs & teas.

The project’s approach was to support actors in different parts of the value chains (input suppliers, producers, service providers, traders, retailers) - with emphasis being placed on production and marketing. The Project’s interventions covered:
new and improved products (entirely new products, improved characteristics of existing products, producing existing products but at different times of the year),
new production techniques and inputs (planting material, agro-chemicals, materials, protected cropping, integrated production, credit and the access to such inputs),
post-harvest and marketing (processing, storage, packaging, marketing channels, continuity of supply) and
organisational and institutional arrangements (contractual arrangements, service provision, regulations).

The development of value chains was necessarily done on a pilot scale and, even when 'completed', generated little income or employment. Progress on these was only going to be achieved when such value chains were scaled up – thus benefiting a greatly increased number of stakeholders. It is expected that the quasi-totality of the scaling up will occur without outside intervention – with actors simply copying best practice. It is argued, however, that this process will be considerably speeded up by judicious outside intervention in its early stages. It is this speed of scaling up that is of critical importance for creating both the comparative advantage of Kosovo farmers and the maximum economic benefit to the community at large.

Clients

The Project initially worked through farmers' associations but these proved to be largely artificial – having the main objective of attracting donor funding. Attention has progressively moved towards family farms and enterprises that are willing to innovate - as well as other actors in the value chains. By the end of 2005 the Project was working with around 160 production clients.

Support to a client is limited to what he is not able to do for himself and largely restricted to the development stage of an enterprise. Support to clients involving the Project in any financial commitment has been subject to written agreement and mostly involved co-financing. Where appropriate, the Project’s contribution is paid back in kind through a return component.

Gender and minorities

Kosova society has been traditionally characterised by patriarchal structures and strict division of work within the family. The Project gender approach is operated within the framework of its overall strategy. Women are increasingly taking advantage of new skills to develop fruit and vegetable processing and marketing, are managing the production of worm compost, of bedding plants and of cut flowers. Patterns of decision-making and control of income have been changing in these cases – and examples are frequently noticed of women increasing their mobility and their interaction with outside actors.

The approach of working with minorities has so far been limited to practical, rather than strategic, dimensions - that is, making sure that promotion of new enterprises was done with minorities as well as with the majority Albanian Kosovars. The recent scaling up of value chains, however, is showing opportunities for strategic changes.

Partnerships

The Project has actively pursued partnerships with other organisations and projects in order to increase its effectiveness. This has been achieved by sharing information and expertise, co-financing and joint implementation. A close collaboration is being undertaken with the Ministry of Agriculture, Forestry and Rural Development.
**Sustainability**

The approach to the promotion of value chains is designed to avoid long-term dependence on SDC intervention. Increasing emphasis is being placed on supporting the development of service providers – more feasible recently now scaling up has started producing a critical mass of demand. Attention is given to encourage the development of other aspects of the enabling environment – such as commercial credit products for horticulture, improved input supply, development of nurseries, government guidelines and regulations. IC staff have formed an association that can now complement IC’s activities and also take over from it once it leaves Kosovo.

**Progress**

The value chains of most of the ten major products worked on are sufficiently advanced to allow for their completion by the end of the project. Local production of strawberries has captured 27% of the local market – up from zero in 2001. Lettuce has been introduced for the first time as a commercial crop in the country – and new varieties, techniques and materials have resulted in clients supplying the market during 11 months of the year. Standardised production techniques for carrots will now allow this crop to be cultivated commercially for the first time in Kosovo.

The assisted scaling up of two products (strawberry and apple) began in 2005 – with strawberries now involving over 60 producers. A start will be made on others in 2006 - should funds allow.

**Potential impact**

Results in the field are allowing estimations of the sort of impact that can be expected when profitable and sustainable value chains are scaled up. The apple production area could increase by 500 ha within 5 years creating 400 full-time jobs and adding an additional €7.6 M each year to the rural economy – and that over the 25-year life of the orchards. Local strawberry production could, within a few years, capture 90% of the local market, creating 35 full-time jobs and adding an extra €0.8M per year to the economy. Once carrot production expands to 190 ha, it would capture 90% of the local market, provide 78 full-time jobs and add €7.6 M per year.

**Future perspectives**

The experience coming out of the Swiss investment is confirming that horticulture offers great potential for the rapid generation of income and employment. This investment, however, has been modest in comparison with the perceived need - and the duration of SPHP-K has been too short to optimise the benefits.

The Swiss are now well placed to make a significant contribution to the future stability of Kosovo through a consolidation and expansion of the value chain promotion already undertaken - as well as addressing this approach to additional products in order to extend benefits to other parts of the sector.

Kosovo’s double handicap of being, on the one hand, in a painful transition from a command to a democratic market economy while, on the other hand, recovering from a long and brutal clash with Serbia - has resulted in a feeble enabling environment. Swiss investment could be profitably directed towards addressing this weakness.
1. Context

An agriculture sector forced towards transition

The 1990s saw the already weak and under-capitalised agricultural sector decline substantially. By the mid-1990s, it was apparent that the sector had declined to the point where it was best characterised as essentially subsistence farming. The proportion of the economically active population engaged in agriculture increased from 26% to over 50% by 1997. The escalating civil war after 1997 then halted virtually all commercial agricultural activity in Kosovo, as well as much household subsistence activity in the main conflict zones. The NATO military intervention in 1999 brought matters to a head, but in the process wrought further and severe damage to the agricultural sector, particularly to the remaining physical and institutional infrastructures. Rural destruction and losses were put at $737 m. From June 1999 onwards, agricultural sector activity effectively re-started, but under extremely adverse conditions.

Employment showed an increasing trend immediately after the war with an influx of donor funding for humanitarian purposes and with the needs of reconstruction – especially of the housing infrastructure. By 2001, with the humanitarian phase starting to close, the only major source of sustainable employment in Kosovo was seen to be in relation to the agricultural sector. Given extremely high levels of food import-dependency (around 80-90%), significant potential was seen to reinvigorate local agricultural production and consumption cycles. In addition, with a large stock of uncultivated land and nearly 60% unemployment (even higher in some rural areas), there were clearly very low opportunity costs associated with new projects that promote agricultural sector employment.

A horticulture sector in forced transition

Horticulture producers in Kosovo used to be part of the Yugoslav command economy and were responsible for producing a limited range of products for a captured market of 22 million people. Much of the responsibility for the input supply, machinery services and marketing, however, was borne by state-controlled agricultural cooperatives – leaving farmers to concentrate on just production. Their situation changed out of all recognition by the new millennium. Their ‘local’ market had been reduced to just 2 million - and one that demanded a wide range of products throughout the year but one that was already being flooded by an efficient and well-tested system of imports. Producers found that cultivating crops was no longer sufficient – they had to start taking responsibility to market their products – and, more difficult still, had to produce what the market demanded – and when it demanded it. The context in which the producers operated had changed dramatically in just a few years leaving them ill-equipped and unprepared to compete – both individually and collectively.

If the market had changed abruptly – so too had the sector’s resources. The troubles not only disrupted social systems but also decimated the sector’s fixed assets. The area under apple orchards, for example, had collapsed from 12,000 ha in 1985 to just 435 – and what remained largely comprised aging trees of out-of-date varieties. A similar situation was reported with strawberries – once an important crop covering 130 ha – it had diminished to practically zero by 2001. Much of the ‘socially-owned’ land and

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1 This section utilizes text from GFA 2002 and IMC 2004
2 Pilot phase review
3 Ministry of Agriculture, Forestry and Rural Development (MAFRD)
infrastructure (including the substantial processing capacity) lay destroyed or abandoned – waiting for legal processes to release them onto the market.

Historically, Kosovo had a regional comparative advantage in fruit and vegetables, and it was assumed that it contained the potential to regain this position in future even though the regional market had already been lost to neighbouring countries. The sector was, nevertheless, contributing somewhere in the region of one-third of GDP and over 50% of all employment in 2001 – although government budgetary resources provided to agriculture accounted for only 1% of the total.

**Underemployment**

The sudden end of the post-war boom has brought into sharp focus Kosovo's most important social problem: underemployment of a young and rapidly growing population. As transfers decline, Kosovo's main business sectors are forced to shed labour.

Discussions of Kosovo's 'real unemployment rate' were often misleading. "Unemployment" was an administrative category that measures the number of those who are actively looking for work but fail to find it. Furthermore, in much of rural Kosovo, the notion of actively looking for work outside the household makes little sense. Almost all the businesses are run by families.

In Kosovo, most people work outside the formal economy, in casual or unregistered labour. This includes large numbers of subsistence farmers, who live almost entirely outside the cash economy. This informal economy is probably larger than the formal economy. However, the existence of a large grey economy does not make the problem of underemployment any less serious.

In 2002, registered employment in Kosovo provided a total of 147,000 jobs. The largest share – almost three quarters of all official employment – was in the public sector. When the Kosovo authorities include the grey economy in their employment estimates, they count 141,000 agricultural workers; this is calculated by counting every rural household as a farm and assuming that each has one member of the household employed in agriculture. In this instance, 'employment' is pure subsistence, *with little produce ever reaching the market*.

Even when the figures include the world of subsistence agriculture, together with large grey sectors in construction, trade and services, the total employment figure for Kosovo is only 325,000, where the working age population is above one million. This means that the employment rate (i.e. the numbers employed expressed as a percentage of the working age population) is less than a third. Even taking into account the youthful age distribution of the population, this is a very bleak picture. Every person employed is obliged to support five or six household members. In this environment, making household savings to finance business investments becomes extremely difficult.

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4 The state of the Kosovo economy and possible ways forward (John Bradley and Gerald Knaus – from *European Stability Initiative*)
2. General strategies

An approach for transformation

The Project’s approach has been, necessarily, medium and long-term. The assumption has been that the basis for increased employment in horticulture lay in its being competitive – ie providing what the future markets would demand and supplying it efficiently. This, in turn, called for a ‘root and branch’ transformation of the sector.

Markets were assessed as demanding both new species and new varieties of existing species. These, therefore, had to be identified, introduced and tested for their adaptability to local conditions as well as for their consumer acceptance. Only when the latter stage had been completed could the scaling up begin that would be necessary to spread benefits widely.

Delivering fresh products at the right time necessitated not only new varieties – but also new production techniques – for example, the range of green house and poly-tunnel technologies required for early and late-season production. These technologies needed to be introduced, tested, demonstrated to producers and, at times, financed.

New technologies and processes were also needed to make production more competitive and safer (eg new machinery and material to reduce weed infestation, and Integrated Production to reduce the indiscriminate use of agrochemicals). Again, a similar process of technology identification, introduction, testing and demonstration to producers was required.

The producer is only one of the actors involved in this transition. The project has been supporting the emergence and development of a range of associated business services – such as input suppliers (eg industrial compost, equipment, and materials), nurseries, machinery hire services and technical advisers.

Critical to this whole approach is understanding what the market demands. The Project has been at the forefront in the monitoring of seasonal market prices, in market assessments and for searching opportunities for bringing producers and traders together. Clients have been supported in identifying market opportunities, in improving the quality of their produce and its grading, packaging and branding.

In brief, the Project’s main approach is ‘Value Chain Promotion’. It has required working at all levels along the value chain with various actors to help build up the different interlocking elements that should result in a profitable and sustainable set of inter-dependent businesses. All this is being done on a small scale but – once successful examples are up and running – scaling up can commence and benefits more widely spread.

Value chain approach

The value chain describes the full range of activities, which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), to delivery to the final consumer. (Kaplinsky, Morris, 2001). A value chain is sustainable when all the links are working effectively and profitably - and are capable of adapting to change.

The establishment of value chains involves a complex process of identification of the new elements required, their testing and adaptation and expansion to a commercial scale. The role of value-chain outsiders (such as SPHP-K) involves identifying the most
potential value chains (existing or imagined) that could benefit from promotion and facilitating the establishment or strengthening of one or more of the weakest links.

The project’s approach was to support the actors on the various levels of existing value chains (input suppliers, producers, service providers, buyers, retailers) - with the main focus being placed on production and marketing.

The Project’s interventions covered:
- new and improved products (entirely new products, improved characteristics of existing products, products offered at different times of the year),
- new production techniques and inputs (e.g., planting material, agro-chemicals, materials, protected cropping, integrated production, credit),
- their marketing (packaging, continuity of supply, marketing channels) and
- organisational and institutional arrangements (contractual arrangements, service provision, regulations).

A value chain is established when all the links are working effectively and profitably. Such a value chain does not need to involve a large number of actors but is likely to be the result of considerable trial and error by actors throughout the chain and to have involved considerable investment – much of it ultimately wasted. The actors involved in building up a new value chain are likely to be innovative and willing to take risks – including the risk involved in collaborating with others.

**Phasing of support for value chain establishment**

The length of time required to support in the establishment of value chains necessarily depends on the growth and reproductive nature of the product involved. It would be expected to be relatively short for most vegetables but considerably longer for top-fruit such as apples. The size of the Project’s investment is likely to progressively increase in the first half of the establishment but would tend to tail off near the end as the innovators become more confident and require less support and a reduced number of links are being worked on.

Any one crop could have more than one value chain. In the case of strawberries, for example, the main value chain for strawberries – involving nursery production of planting material, field production of the main crop and marketing - is nearing completion. The establishment of sub-value chains as a separate exercise could be envisaged – in this case the production and marketing of strawberries produced under plastic.

**Scaling up**

Scaling up is the process whereby a value chain expands to benefit a greatly increased number of stakeholders. It is expected that the quasi-totality of the scaling up will occur without outside intervention – with actors simply copying best practice. Preconditions for any successful scaling up of a value chain include positive market response, increased benefits created through competitive advantages, better quality and market positioning of the product.

It is argued, however, that this process will be considerably speeded up by judicious outside intervention in its early stages. It is this speed of scaling up that is of critical importance for creating both the comparative advantage of Kosovo farmers and the maximum economic benefit to the community at large. While the activities in a completed value chain that could be done on a commercial basis should not be done by a project, the latter’s involvement may well be required in the initial stages of the development of a new value chain in a country where so many supporting services to the rural sector are absent. Better for a donor to initially concentrate on promoting private sector involvement in the major activities of the chain (such as production of planting material, crop
production, marketing) while substituting for the private sector in other activities (training, market information). The private sector has a greater chance of making these supporting activities commercial once a minimum critical mass of demand for them has built up.

Two main processes of scaling up can be identified. The first involves individuals copying from a successful neighbour while the second happens when a new value chain is established at a new site a considerable distance from the location of the pilot value chain.

Examples are presented in Annex R of two of the three largest project components - top fruit and soft fruit – both of which are ready for scaling up. The status of each value chain is described – and is followed by a presentation of the potential for outside intervention to speed up the subsequent scaling up.

**Donor involvement in the evolution of value chains**

Value chain development and scaling up can be thought of as passing through several progressive stages with a consequent evolution of the role of the project, of risk and of scale. Four such stages are thought to exist depending strongly on the commercial scale of operation.

- **Development of the VC:** that is characterised by the high risk of actors' involvement, the project sharing the risk of innovation, emphasis being put on fitting the pieces of the jigsaw together, necessarily working on a small scale. The objective for *production* would be to move towards a commercial scale of operation for an individual producer utilising the new techniques; *service provision* may be subsidised on a risk-sharing; advice directly provided by Project since many answers still not known and the scale cannot support an advisory service provider.

- **Expansion of scale of initial producers and introduction of component to their neighbours:** Project continues providing advice, linkages; starts promoting the establishment of a commercial credit product, formalising SP for machinery services, continues to assure access to planting material. Value chain considered largely complete by the end of this stage.

- **Assisted scaling up:** Introduction of component to new geographical areas with some risk-sharing/subsidies – but at a lower level. Operation through advisory SPs started. Reliance on study visits to first location. Facilitates access to established credit product. Machinery services provided by service providers at full cost.

- **Unassisted scaling up:** no direct input by Project. Latter concentrating on promotion of overall enabling environment: private advisory service provision, access to commercial credit, machinery services, marketing exploration and channels, policy dialogue – possibility of Horticulture Information Centre.

**Choice of components**

SPHP-K's market-led programme was initially founded on two components – ie (i) vegetable production and (ii) nursery production – the choice based on the assessment of future market demand made at the beginning of the project period.

**The Vegetable Programme and its evolution**

This intervention was built around the hypothesis that improved skills and new technologies would enable producers to better compete in quality, price and continuity of supply with imported products and therefore create more income in the rural areas. To achieve these aims 160 varieties of 25 vegetable species were introduced and tested –
with mixed results. After three years it was realized that the project’s intervention was
too diverse to be effective and, from 2004, intervention was focused on just six vegetable
that were considered having the highest market potential (tomato, lettuce, carrot, onion,
garlic and white bean). Work on Integrated Production commenced in 2004 and Farmer
Field Schools on field tomatoes operated in 2005.

The Nursery Programme and its evolution
The Programme’s principal focus was initially the production of quality, disease-free,
certified fruit trees to provide the basis for the redevelopment of the decimated top fruit
industry. Subsequently, other aspects were included. The production of strawberries
was added later in 2001 and subsequently other soft fruits as well (raspberries and
blackberries). Demonstration orchards for apple, pears, plums, cherries were
established and have been since followed by the promotion of commercial orchards. The
nursery programme expanded to cover the production bedding plants seedlings and that
in turn led to the production of bedding plants up to the point of sale – as well as cut
flowers. Another off-spring of the nursery programme was the development of small and
large-scale compost manufacture.

Some activities were formerly part of the Nursery Programme but have since been
terminated. Garden centres were promoted with the idea that different specialised
nursery owners would supply each other with their products for onward sale. This idea –
requiring considerable trust and collaboration – is now thought to have been premature.

The production of certified vines was the object of collaboration with the Fidani
Association in Rahovec with the view of competing with uncertified imported material.
The programme was stopped in anticipation of substantial support to the industry from
the EU – but which ultimately did not materialise.

A study in 2001 identified the potential of rejuvenating the hazelnut industry. Agree-
ment was obtained from UNMIK to work with the five SOEs5 involved but, after initial
work on 97 hectares, collaboration ceased due to security concerns.

An international study in 2002 followed by a stakeholder workshop identified potential of
the Herbs and Teas sub-sector. Good results of chemical analysis of cultivated herbs
and teas have subsequently confirmed its potential of cultivation – as a more sustainable
approach than collection.

Clients and their organisations
The Project Document of the pilot phase indicated that support to the horticulture
industry should be directed through meso-level institutions such as farmers’
associations, service providers and centres of education. After the war farmers were
encouraged by donors to form associations to facilitate the provision of assistance.
Anxious to commence productive work in its first year, the Project offered collaboration to
associations that already existed – most established through on-going projects such as
FAO/SARK and KLIP. The Project started working with nine 9 farmers associations in
2001 – involving the vegetable, nursery and soft fruit sectors. The number of
collaborating associations increased in 2002 to 33 – including four SOE for the
rehabilitation of hazelnut plantations.

5 Socially (State) Owned Enterprises
The experience with these associations was poor. Many were found to be quite artificial – brought together purely with the objective of obtaining donor funding – and with the chairmen or boards being the only active members and who accessed to themselves the bulk of the benefits. These representatives often did not reflect the demands of their members nor disseminate advice to their members as agreed with the Project.

The External Evaluation of July 2002 recognised this problem and recommended that the Project only work with clients that showed potential for business development. The Project consequently started selecting a wider range of clients including individual farming families as well as small enterprises. By 2003 the Project was receiving increasing numbers of applications necessitating a more structured response. Applicants were requested to complete questionnaires and selection was done in staff meetings based on the project objectives and the means available.

From 2004 opportunities started to present themselves for collaboration between clients – a situation that the Project assisted through certain geographical concentration. Collaboration in strawberry marketing in Gjakova led to the formation of the Fragaria Association – while the introduction of a carrot washing machine was considered justified as a avenue of collaboration between a group of producers around Peja. Similarly the on-going introduction of specialised machinery for a range of crops in specific geographical areas is hoped will be the catalyst that will lead to further collaboration amongst producers even if the machinery itself will be owned and operated by service providers.

The identification of clients in 2005 for the scaling up of components (soft & top fruits and herbs & teas) has been done in collaboration with MAFRD regional offices and Municipality officials.

The Project considers that selection of clients on the basis of potential has shown considerable promise.

It is thought that Kosovars give first priority to their (extended) families – considered far more important than that of the wider agricultural or business communities. The formation of meaningful associations is unlikely to occur without their benefits being very clear and substantial. The future development of farmers’ associations is likely to be tentative and slow. The Project has attempted to promote the formation of national representation of horticultural producers through the establishment of the Horticultural Promotion Group. The intension was that this body – originally organised by the Project – would be gradually taken over by its participants. No sign of this occurring has been

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6 See Annex C - vegetables
evident – and the benefits from the meetings of the Group have been largely limited to information sharing and the development of linkages.

Categorisation of farming families

A consultancy in 2004 developed a categorisation of farming families involved in horticulture that the Project has found helpful. The following four types were identified:

- **Traditional rural family**: a large combined (extended) family of up to 30 persons with the head making most of the decisions, the traditional horticultural expertise residing with the older generation, opting mostly for subsistence farming with little adoption of new techniques, horticulture representing only a small part of the economic activity and with a tendency to risk-aversion.

- **Mixed /Transitional families**: covers a wide range of family types that have experienced horticulture as a viable investment opportunity – but only as one amongst many. They are generally looking for the most profitable investments and horticulture for them is considered as in a test phase. The dynamics within these families related to decision-making and activities are quite dynamic.

- **Horticulture family enterprises**: are families that operate a horticulture business as their main activity. They tend to be smaller in size and innovative, entrepreneurial, risk-taking with access to resources being evenly distributed between the genders.

- **Widow-led families**: represent markedly different operations and challenges resulting from the absence of adult males. Their first concern is with economic survival. Their social isolation and high workload need to be considered when planning interventions.

Support to clients

Support to a client is limited to what he is not able to do for himself. It should largely be limited to the development stage of his enterprise – such as the introduction and testing of new techniques and approaches. Support in the operational phase can be justified in the initial stages on the principle of sharing the risk of an introduction. Where possible, however, the latter should be as a loan.

The types of support that the project offers in the development phase of an enterprise include:

- Advice on business, organisational, technical and marketing aspects;
- Providing access to inputs not so far available on the market;
- Establishing linkages with other actors, organising study tours;
- Provision of information (markets, input suppliers, technical information) – not currently available otherwise;
- Promotion of an enabling environment (advocacy regarding credit products, regulations);
- Sharing financial risks of new operations through co-financing - with the Project’s investment being repaid, where appropriate, as a return component in kind for use by other clients.

Actors involved in the establishment of a new value chain are exposed to the greatest risk and therefore require the greatest degree of support from the Project.

Co-financing of activities with producers was introduced in 2002 and constituted a simple sharing of costs under the principle of risk-sharing. Initially when investment was mainly

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11 Scheuermeier, U. et al., *Topical PRA on 'Gender in Horticulture' in SPHP-K*, SDC, Kosovo, May 2004
limited to variety trials the Project would provide some of the key inputs and the producer
the rest of the investment. Gradually, as more substantial investment was called for –
‘development’ investment (such as advice, loan of a new type of machine) would be
provided free but, where appropriate, operational investment (such as the purchase
of planting material) would be pre-financed by the Project but repaid by the client in the
form of a return component, in kind. Investment in strawberry runners, for example,
might be ‘repaid’ with an equivalent value of second-generation runners. Some return
components had the additional advantage of building links between service providers or
input suppliers and producers. Investment in machinery for a service provider, for
example, would be repaid in low-cost services to other clients – thus promoting the SP’s
business links. Similarly, investment in nurseries would be repaid by free planning
material to pilot producers. Later in the Project, the amount of financial contribution was
seen to be inversely related to the perceived degree of risk - so scaling up of an already
complete value chain would attract considerably less financial support.

Support to clients involving any financial commitment by the Project has been subject to
Participatory Technology Agreements (PTAs) that specify the objective of the
collaboration and the respective responsibilities of the signatories. To date 298 PTAs
have been established. Experience of cases where PTAs have not been established has
convincied the Project of the usefulness of this tool – even if the agreements cannot be
considered legally binding.

The Project had 160 production clients as of December 2005 (Annex T).

Reducing poverty and disadvantage

Poor and disadvantaged individuals and families are not to be selected as direct clients
during the value chain establishment and initial scaling up phases of the Project’s
interventions – since these stages require innovative clients with some assets.

Reducing poverty and disadvantage should, however, be constantly in mind in designing
and implementing project activities. Outcomes to be aimed for include the following:

- Designing interventions that will lead to an increase in paid and casual
  employment – or will not lead to a reduction. The promotion of machinery use, for
  instance, is best targeted at labour bottlenecks that, once overcome, will lead to
  expansion of an enterprise and of associated labour requirement.

- Designing interventions that can be financed in a gradual and progressive
  manner giving the poor the possibility of building up capacity as, and when, they
  have the required assets (the production of worm compost, for example, allows
  the gradual build up of a business suitable for the poor – whereas industrial
  compost production requires a heavy investment up front.

- Promoting a poor-friendly enabling environment (eg the establishment of credit
  products requiring little or no co-lateral).

- Designing the later stages of scaling up to include specific and direct pro-poor
  approaches.

Gender and minorities

Gender

Kosova society has been traditionally characterised by patriarchal structures and strict
division of work within the family. Men were working on the fields whereas women were
involved in child-care and housework. Women moved to their husband’s place after

8 See also Annex K – Gender and Minorities
marriage and all productive properties of the household (buildings, animals, land, tools, machinery, etc) belonged to men. The considerably improved access to education, employment, social welfare programmes, health care, and political office gained by women during the golden years of Yugoslavia were largely lost during the troubles of the last 15 years. Since the war the re-emancipation has been most evident in the urban rather than in the rural areas.

While the Project had no specific gender strategy in the first 3 years, in practice staff were aware of the issues and promoted both – what were later understood to be – practical and strategic gender issues. This was particularly evident when client selection changed from that of associations to that of rural families. Women's practical concerns have benefited when improvements have been made in enterprises in which they were involved or from which they benefited. Strategic improvements, however, were particularly evident in certain project activities. Women are increasingly taking advantage of new processing skills to develop fruit and vegetable processing and marketing, are managing the production of worm compost, of bedding plants and of cut flowers. Moves have been noticed that patterns of decision-making and control of income have been changing in these cases – as well as many cases of women showing much more mobility and interaction with outside actors.

Minorities

The project approach of working with minorities has so far been limited to practical rather than strategic dimensions ie making sure that promotion of new enterprises was done with minorities as well as with the majority Albanian Kosovars - thus the promotion of wine production for the 113-member Serb association of Hoqa e Madhe in 2001, the development of new vegetable production techniques with the Turkish community of Mamusha as well as with the Ashkalia minorities in Xerxe, the establishment of cut-flower production with the Serb association in Lipjan, and of raspberry production with Serbs in Koretishte.

Other interventions along these lines have been frustrated. Moves to work in the Serb-dominated area north of Mitrovice, for example, were prevented by the riots of March 2004 while a previous effort to work with Serbs around Gjilan in raspberry production was frustrated by their demand that the Project take responsibility for marketing.

This latter case illustrates that the Project could well develop a strategic approach to minorities – for example assisting Serbs to interact more with the Albanian majority.

Relationship with the overall project strategy

The Project’s strategy regarding gender and minorities has become more explicit following the greater concern shown by SDC in the subject in (2002). The case of assistance provided to a Serb farmer to establish an apple orchard in isolation in Shterpce Municipality was one example that led the project in clarifying that its Gender and Minorities strategy should only operate within the framework of its overall project strategy. The example quoted would not have been implemented within the new strategy.

Service provision

Service provision is seen as an essential part of a sustainable value chain – and such provision is considered best supplied by the private sector wherever appropriate in order to maximise efficiency. The main areas of service provision considered by the Project are: advice, input supply, machinery hire and credit.

The Project has been working with a range of other clients including advisory service providers, input suppliers, machinery SPs, packaging manufacturers, processors and
The interaction normally has not involved financial support to input suppliers, packaging manufacturers and traders.

**Advisory service provision:** The promotion of advisory service provision has been an objective since the beginning of the Project – yet little has been achieved. This situation is hardly surprising given that the early years have been dominated by the development of value chains on a small scale and in which programme staff needed to be intimately involved. Scope for advisory service provision – and thus the opportunity to promote such providers – is now becoming apparent as the Project is able to put more emphasis on the scaling up of completed value chains. Two SPs are currently engaged in the scaling up of strawberry production while a further two in the establishment of apple orchards. While these SPs are currently being funded by the Project, steps are afoot to include their payment as an embedded service in loans provided by commercial banks and MFIs. It is hoped that other paying clients in future will include the larger and more enterprising of producers as well as producers’ associations. Technical training is being provided to the SPs and training in communication and business skills is planned. (Service providers are also being trained in Integrated Production although their financing is likely to remain with donors for the foreseeable future.)

It is though worthwhile to promote the private provision of advisory services since such services provided by Government are unlikely to be sufficiently comprehensive or widespread.

**Input supply:** The promotion of an improvement in input supply is a subject addressed in Chapter 4. The approach has involved working with input suppliers but without providing any financial assistance.

**Machinery hire:** Machinery hire in agriculture is already established as a service in the private sector. The Project’s involvement with such service providers, therefore, has been oriented towards the introduction of specialised machinery for horticulture that is so far unknown in Kosovo. The approach involves the Project in identifying the need for a particular machine, under-taking the risk of purchasing at least one machine of any particular type, of testing it with clients in the prevailing local conditions and, if found attractive by producers, to identify an individual or business and to provide it with the machine for onward hiring to clients. The co-financing or pre-financing of the machine by the Project for the service provider is justified for two reasons. The first is to share the risk that the demand for the machine will not prove to be economic. The second is that the volume of demand for the machine will initially be too small to justify the investment – bearing in mind that it is purchased for use in a value chain that is just beginning to get off the ground. The experience with the introduction of machinery is described in more detail in Chapter 4.

**Credit:** Credit provision by commercial banks in Kosovo for agriculture is undeveloped and represents just 2% of their portfolio. Current products are normally limited to three years, require monthly repayments and tend not to include grace periods. This situation reflects the lack of short-term deposits available with banks as well as the general lack of stability of Kosovo. The Project aims to encourage commercial banks and MFIs to introduce credit products suitable for horticulture. Important investments requiring their own credit products include top-fruit orchard establishment, soft-fruit production, nursery development, manufacture of greenhouses and the purchase of greenhouses and their equipment. The approach taken by the Project is illustrated below by the case of apple orchard establishment.

The Project would work with other actors to encourage commercial banks to set up an orchard establishment credit product. The Project’s involvement would largely involve reducing the banks’ perceived risk by:
• Providing information on the existing and future market for Kovovo apples;
• Providing a structured approach to the identification of clients;
• Jointly selecting the client with the bank with the Project’s responsibilities covering judging the clients skill in horticulture and the suitability of the resources available to the client including land, equipment and storage;
• Assisting and advising both borrower and lender in the establishment of a reliable business plan; and,
• Providing technical and business advice to the client through selected and supported service providers.

The ultimate objective would be that, after a few years of such promotion, certain banks would be confident enough to provide the ‘orchard establishment product’ without further project involvement.

**Information dissemination**

Little information regarding horticulture has been available for those interested in the sector in Kosovo – including farmers, service providers and students. Although the situation is far better in neighbouring Serbia where abundant and relevant documentation is available – access to these publications is difficult – both physically and psychologically.

SPHP-K has tried to progressively fill this void as its experience has accumulated. The first information disseminated was that of its weekly price information of horticultural products in the Pristina market. This was initially posted to subscribers on a monthly basis and, in late 2002, placed on the Project’s website for easier access. The Project now boasts four years of weekly price information covering 32 horticultural products – data that is normally the sole source used in the price analyses of other organisations.

**Technical books** by specialists have been sponsored financially covering the subjects of phyto-pathology, floriculture practice and top-fruit pruning.

A series of ‘fact sheets’ - or technical bulletins - been developed by the Project, authored either by its staff or contracted specialists. The subjects covered so far are carrots, cabbage, lettuce and white beans with two more ready to go to the press. Tentative agreement was made with the EAR SASS II Project to share the costs of making cheaper versions in much larger print runs – but did not materialise. The publication of these fact sheets has met with little real demand – especially when it was decided to charge €2.50 rather than to distribute them free.

A start has been made in 2005 with the compilation of **crop market profiles** that provide commented information regarding the market size, market requirements and seasonality of individual products along with data on imports, source of imports, market share taken by local produce, prices and perspectives for local production. These have been produced so far for tomatoes, onions, strawberries and apples. They have already proved their usefulness in discussions with finance institutions on the introduction of credit products for horticulture.

Capitalisation documents, intended more for development workers, started to be produced in 2004 and present and analyse the Project’s experiences. Subjects covered so far have been ornamentals, vegetables and strawberries.

Of all the above publications that dealing with price information appears to have met with by far the most demand while the new crop market profiles are likely to enjoy the same degree of acceptance. Further reflection is required to assess the value of the fact sheets and capitalisation documents.
3. Input supply and production strategies

Input supply

Input supply was organized solely by state-owned cooperatives in the former Yugoslavia before 1989. Private companies started to become involved in Kosovo during the 90s through shops (or agriculture pharmacies) but under the strong quality control of the Government. Both cooperatives and private companies were serviced by large input supply companies of FR Yugoslavia – mostly based in Belgrade. Traders in Kosovo, therefore, developed little hands-on experience of sourcing their products from a range of companies and countries. Both cooperatives and agro-pharmacies provided technical advice to farmers in addition to agricultural inputs.

The 1998-9 war changed the situation dramatically – trade linkages were disrupted, the cooperatives stopped operation and quality control ceased. A very limited range of inputs was available in Kosovo during the first years after the war during which time private companies were rebuilding their regional and international contacts – although this proved less than straightforward. Most reputable international companies were not willing to establish official representation in Kosovo - since it had no legal status. Their regional representatives (in Belgrade, Sarajevo or Skopje), however, tried to fill the gap by creating 'secondary representatives', a move that has led to considerable confusion – three local companies, for instance, claimed to be the sole representatives of Royal Sluis, a Dutch vegetable seed company.

The variable and unreliable quality of inputs on the Kosovo market has emerged as a serious issue in post-war Kosovo. Cases are frequently quoted of ‘counterfeit’ seeds, fertilisers containing constituents not printed on the packaging, poor quality plastic and infected planting material.

Strategy

The approach of the Project of developing new value chains has included the introduction, and increasing demand for, a wide range of new inputs and technologies. Given the initial problems of the trading sector, the Project’s followed a 4-step approach to promoting access to such inputs: (i) direct importing of technology and inputs for testing and introduction to clients, (ii) ordering inputs through local dealers, (iii) encouraging local dealers to stock the required inputs and encouraging them to be transparent regarding the characteristics and quality of their products, and (iv) promoting, where appropriate, the manufacture of inputs, material and machinery in-country.

A considerable improvement in the input supply situation has be recognised since 2004 with some input dealers beginning to specialise in particular agricultural sub-sectors. A greater range of horticultural materials is now available in Kosovo. At least two companies, “Agrocoop” from Shtime and “Agronion” from Fushe Kosova are supplying the market with inputs and materials specifically for horticulture - including fleece, ground cover, quick pots, irrigation equipment, seeds and seedlings. In general, the prices of these inputs have significantly reduced over the last few years.

Planting material

The greatest effort has been expended on promoting the access of farmers to good quality planting material of a wide range of improved species and varieties.

Vegetables: The Project initially directly imported improved seeds from reputable European companies such as Royal Sluis, Hild and Nunems. The products of these companies are now being imported by local dealers – but the industry has too many dealers of dubious sincerity and farmers continue to lack confidence in the authenticity of
the seeds on offer. The bulk of this seed is hybrid and needs to be ordered each year. There is little possibility in the medium term of hybrid production being established within Kosovo.

The garlic cultivar ‘Thermodrome’, introduced by the Project in 2003, has shown good potential and is increasingly cultivated. A programme of establishing the regular propagation at high elevations of the planting material – the cloves – has been underway since 2004. Three different cultivars are being multiplied in 2005.

**Top fruit:** The Project has introduced 64 varieties of four species of top-fruit (apples, pears, plums and cherries) and is working with 3 nursery owners (to be increased to 6 in 2006) for establishing the production of complete trees for sale to the Kosovo top-fruit industry.

**Soft fruit:** Strawberry mother plants will need to be imported for the foreseeable future. The project has developed four nurseries in the private sector that bulk up this planting material by a factor of 50 for onward sale to growers – the economic life of a strawberry plantation being three years. These nursery owners have been encouraged to organise the importation of these mother plants themselves for the last two years – but without success for a variety of reasons. It is expected that they will do so as from 2006.

The importation and further multiplication of the two other soft fruit species introduced – raspberries and blackberries – are similar to the case of top-fruit – ie that importation of planting material needs to be done just once – thereafter all multiplication can be carried out in Kosovo. The Project is currently working with one nursery for these species.

**Ornamentals:** The Project is promoting the production of bedding plants and cut-flower species from imported seed (rather than the import of seedlings) as well as the vegetative propagation of certain species of bedding plants. Herbaceous shrub and tree planting material is ordered for arrival in 2006 allowing three nurseries to propagate their own planting material.

**Herbs and teas:** The Project has introduced planting material of nine herbs and tea species from Serbia. All these species are now being multiplied annually within Kosovo.

**Agro-chemicals**

Soluble fertilisers have been introduced as a more effective and ecological method when used in conjunction with drip-irrigation – covering protected cropping as well as soft and top. Soluble fertilisers had to be imported directly by the Project initially but are now available with a few input suppliers in-country.

A major issue is outstanding, however, that related to the limited range of conventional fertilisers imported – mostly just 15:15:15. Not only is the quality of this product often problematic, it is used by farmers indiscriminately for most crops and in all soil conditions – a situation that exists because of both the ignorance of the farming community as well as the apparently entrenched interests of the larger importers.

**Materials and equipment**

**Fleece:** protects plants from frost and is a key tool in extending dates of harvesting. Initially the material had to be imported directly by the Project but is now widely available in the Kosovo market.

**Plastic mulch and ground cover:** introduced by the Project, are useful materials in weed control for vegetables, herbs and soft fruit. As with fleece – they were originally imported by the Project but are now widely available.

**Drip irrigation:** economises on water and reduces disease. The Project initially imported this equipment for introduction and, within the last two years, almost all commercial
greenhouses have installed such systems. A particular dramatic illustration is of the
Turkish village of Mamusha in Prizren Municipality that produces tomatoes under simple
drip irrigation demonstration as far back as 2002. It had stopped further investment in the village by 2004 without seeing much progress. During 2005, however, poly house construction expanded in the area by 55.80 ha and 80% of farmers had installed drip irrigation. The main factors affecting this, eventually, rapid adoption appear to be the combination of witnessing the much lower disease infestation experienced by the initial adopters and the greatly reduced price of drip irrigation material on the market.

**Machinery**

The Project has, where appropriate, introduced mechanisation in order to overcome constraints in production and post harvest. Although these constraints were mostly related to labour input, such mechanisation is expected to allow an expansion of scale of operation thus increasing employment opportunities – as well as income. Examples of such cases include mechanised bed preparation, sowing, weeding, harvesting and threshing in vegetable field crops. It has involved equipment – mainly tractor-mounted – specific to the new crops introduced and, for this reason, previously unknown or unavailable Kosovo. The justification in the case of the introduction of a carrot washing machine was the improvement in the quality of the marketed product.

Once a machine is shown to be useful, the Project’s approach is to encourage input dealers to stock it and to promote the ownership of the equipment by machinery service providers9.

**Production**

**Variety and species adaptation trials**

Peja Institute and Pristina University implemented variety trials of horticulture species up to 1990 utilising a range of different agro-climatic sites throughout the country. Peja Institute led with planting material production and variety assessment. It established on variety collection orchard near Peja and possessed stool beds of vigorous vegetative rootstock within its premises.

The civil disruption that occurred during the 90s progressively led to the collapse of the activities of these two institutions – particularly because of the replacement of the staff with unqualified individuals.

In 2001 no trial programme existed in the country so that the Project took upon itself the promotion and financing of trials of varieties and techniques that it thought necessary. The most urgent task was the identification of the most appropriate cultivars and cultural techniques required for the re-establishment of the horticulture sector.

**Strategy**

The Project imported planting material of a range of species and varieties in order to discover the best varieties for the local conditions. Farmers who were innovative, ready to take risks and to share information were to be selected to run the trials. Cultural practices were recorded and information made available for interested stake holders through field days and workshops.

**Implementation**

Certified planting material was sourced from reliable suppliers – from nine countries in Europe.

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9 See Annex P - Machinery
A range of cultivars and techniques were tried in different indoor and outdoor sites – as presented in the table on the following page. Successional sowing was explored in order to extend presence in the market. New materials were imported such as fleece, ground cover, drip irrigation systems, high quality agrochemicals. Trials were conducted in the different project sub-sectors of vegetables, fruits, bedding plants and herbs & teas.

### Varieties and species adaptation trials

<table>
<thead>
<tr>
<th></th>
<th>Top fruit</th>
<th>Soft fruit</th>
<th>Vegetables</th>
<th>Ornamentals</th>
<th>Teas &amp; herbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nr of varieties or species</td>
<td>64 cultivars of four species (apple, pear, plum and cherries)</td>
<td>19 varieties of three species (strawberries, raspberries and blackberries)</td>
<td>267 varieties and hybrids of 30 species(^{10})</td>
<td>20 species</td>
<td>7 species</td>
</tr>
<tr>
<td>Nr of farmers involved</td>
<td>28</td>
<td>78</td>
<td>140</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>Ares covered</td>
<td>14.7</td>
<td>19.71</td>
<td>36.9</td>
<td>100,000 plants produced</td>
<td>3.8 ha</td>
</tr>
</tbody>
</table>

Different cultural practices were conducted in order to have a range of information on the techniques and cultivar’s used\(^{11}\). Local consultants were used to assess the morphological characteristics of different top fruit in 2005 – an activity that will continue in the future. Information is currently being analysed and will be made available for interested stake holders. Field days, events and workshops are used to publish results and information’s gathered in filed trials.

### Observations

Farmers were generally ready to participate, take risks and share the information amongst the farming community during events, workshops and through the media. More information on characteristics are required from suppliers when a new variety is introduced - especially related to insect pest and disease tolerance. More attention needs to be given to publishing Information gathered from trials.

The species and varieties tested fall into three categories regarding the degree of acceptance the had from farmers and their perception of the consumer’s preference.

Those that were not adopted due to high price, or unavailability, of seed or lack of consumer preference included: swede, turnip, parsnip, celery and celeriac, oriental vegetables, Brussels sprouts, beetroot, sweet block peppers, cherry tomatoes, three strawberry varieties.

Species and types partially adopted were - broccoli, radish, cauliflower, truss tomato, onion set production, new hybrids of melon and water melon, leeks, over-wintered leek varieties, four raspberry varieties.

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\(^{10}\) Tomatoes, Meat tomatoes, Aubergine, Cucumbers, Gherkins, Peppers, Radish, Lettuce, Spinach, Carrots, Beetroots, Cabbage, Cauliflower, Broccoli, Leeks, Onions, Bulb onions, Garlic, Watermelon, Melon, Brussels Sprout, Turnip, Parsnip, Swede, Celery, Celeriac, Kohlrabi, Swiss Chard, Ornamental Vegetables.

\(^{11}\) Mulch – organic and industrial (plastic cover); irrigation systems (drip and sprinkler system); small-scale equipment (hand cultivators, hoeing tools, push hoes, seed drills, bunder web, genuine plastic cover to reduce condensation in poly tunnels, different coloured ground covers, bench grafting, quick pots, dense planting, modern pruning, use of sprayers, support systems, crop rotation.
The fully adopted species and varieties were lettuce, autumn-planted onion sets, autumn-planted garlic, spinach, meat tomato, onion production from seed, three strawberry varieties, two raspberry varieties, and three blackberry varieties.

Apple varieties need one more year of assessment – but early results suggest that three of early varieties and two of mid/late varieties can be considered well adapted and recommended for propagation.

Constraints
Farmers do not have the habit of keeping records and persuading them to do so is problematic. They are also generally uninformed of the biology of plants – a problem when specific activities are required such as pollination, varietal differences affecting indoor vs outdoor cultivation or storage and hybridisation.

Planting material
In Yugoslav times planting material was centralised – with the material for one species being produced by one centre and then distributed to all provinces once it was registered and certified. Planting material production at the Peja Institute, for instance, was carried out on a large scale but for a limited number of species and varieties.

Large agro-kombinats, however, would produce their own planting material – such for their own needs in their properties (tobacco, tomato). Fruit trees have been produced only from the state-owned companies till 1980, when the first commercial private fruit tree producers started to serve the market. Trees grafted on very vigorous vegetative and generative rootstocks were available.

In 2001 fruit tree producers were identified by the Project in Ferizaj, Shtime and Kamenica regions, producing only generative rootstock of apples, plums, cherries, pears, and quince. Beside that, vegetable seedling producers were operating on a small scale. None was registered or certified since no scheme for certification and registration existed. Planting material was import mainly from Serbia and Macedonia without any border control and was marketed without any restriction. Under these conditions, reliable and certified planting material was not available.

Strategy
The aim of the Project was to promote quality planting material propagation which would meet the criteria for certification. The strategy established was based on working with, and up-grading, established nurseries in order that they would reach the standards necessary to be registered legally. In order to achieve this, the Project worked with both the nurseries and with MAFRD. Activities at nursery level included providing information and training on the best cultural practices and supplying them with certified planting material that they could multiply up. Activities at the public sector level included participation in ministry’s activities on quality production (participation in its Fruit Group, field visits with phyto-sanitary inspectors, information sharing on activities and planting material sources and workshops on quality planting material production).

Potential and constraints
During this work both the potential of, and the constraints facing, the industry have become apparent.

Potential: The current development of quality tree producers is encouraging – although the situation is still fragile. Latent demand for planting material for different species is high – despite the obvious weaknesses of the general enabling environment. A strong desire exists amongst planting material producers to compete effectively against imports.
Constraints: Little support is yet available for the sector from the relevant institutions. There is a lack of effective phyto-sanitary control at the borders leading to the import of inappropriate, infected and cheap materials, the general knowledge on production technologies is in want of improvement and credit products for the sector are urgently needed.

Timing of production
Varying the time produce is offered to the market can be a key method of both obtaining the higher prices that are available in the off-season (as indicated in the Project's weekly monitoring of prices) as well as accessing markets at additional periods thus increasing total volumes sold. The Project has introduced a range of techniques and materials in order to achieve this – as mentioned below - while further details are provided in the relevant sections.

- **Range of varieties:** carrots, tomatoes, strawberries, raspberries, blackberries, apples.
- **High altitude for late production:** strawberries.
- **Autumn planting:** (ie instead of spring): onions.
- **Successional sowing:** carrots, lettuce, tomatoes, bedding plants.
- **Protected cropping:** using poly-tunnels and green-houses: lettuce, tomatoes, spinach, strawberries.
- **Fleece:** for frost protection and early production: onions, carrots, strawberries.
- **Premature harvest:** green onions.
- **Processing:** pickled vegetables & ajvar, strawberries, raspberries, blackberries.
- **Storage:** onions, apples.

Highlights of the above include lettuce being made available on the market for 12 months (previously not being commercialised at all), tomatoes for 5 months (previously only 2 months), soft fruit for 7 months (previously just 3 months).

Weed control
Farmers are generally poorly informed about different weed control measures and typically carry out no weed control after a crop is harvested. Technologies have been introduced to clients covering all three main approaches weed control – cultural, mechanical and chemical.

**Cultural methods:** plastic mulch has been successfully adopted on tomato, peppers, egg plants, cucumbers and strawberries - while the thicker, and more durable, webbing cover is working well with lettuce and herb production. Organic mulch and intercropping is likely to be taken up in orchards.

**Mechanical methods:** row seeding with machines – both hand-held and tractor-mounted – is starting to catch on allowing the use of improved hand-held hoes as well as tractor-mounted weeder.

**Chemical methods:** the introduction of pre-emergent and selective herbicides for carrot and onion production are proving successful.

Local consultants have been used for weed identification and the use of service providers for specialised chemical control encouraged. Building farmers’ knowledge of the subject has been done through workshops, field visits, modular trainings.

Pest and disease control
No pest and disease problems are found in the country that are specific to Kosovo – rather they are typical of the species and varieties that have been introduced over many years from other parts of Europe. Little has been done, however, to systematically
combat pests and diseases since 1989 and no inventory has been taken since that time. The weak border controls do little to protect the country from the arrival of new infestations.

The Project aims to promote the use of environmentally safe control of pests and disease in the most cost effective and sustainable manner. The strategy used involves a number of steps:

(i) increasing the awareness of producers about insect pests and disease through activities like seminars, workshops, field visits, modular trainings constituted the highest priority;
(ii) increasing the awareness amongst input suppliers of low quality agrochemicals available in the local market, through contacting them directly or encouraging them to participate in workshops, events and talks organized by Project with farming community and thus creating an environment where the issue can be discussed;
(iii) By engaging service providers to apply plant protection advanced methods.

Implementation

A range of activities were undertaken within this strategy: introduction of insect pests and disease through seminars, workshops, field visits, modular trainings; introduction of high quality inputs from import and comparison with the locally-available inputs; supporting farmers to improve cultural practices like weed control, spacing between plants, irrigation, land cultivation; by identification and supporting local advisors to practice with farmers plant protection best practices; by introduction quality seeds and planting materials (runners, canes, rootstocks, young trees, cuttings) from import; by identification and encouraging input suppliers to provide high quality inputs from import.

With MAFRD now developing its capabilities, the Project will devote more time to working with the Ministry in devising a structured and industry-wide approach to the control of pests and diseases affecting horticulture.
4. Post-harvest and marketing strategies

*Post-harvest, storage and processing*

The generally low attention paid to post-harvest, storage and processing issues by Kosovo producers is detailed in Annex I. Improvement in these areas is clearly an essential part of the development of the value chains concerned.

*Post-harvest:* Two major activities have been undertaken – grading and washing. Energies devoted to informing farmers of the advantage of grading of tomatoes and soft-fruit have not led to the achievements desired. Tomato producers were discouraged when traders showed themselves unwilling to pay a premium for sorted quality. Serious grading of soft fruit began only when producers started selling to supermarkets. The introduction of a washing machine for carrots, on the other hand, has received appreciation in the market and has encouraged the owner of the machine to expand his production.

*Storage:* Simple garlic storage based on pallets was introduced to members of four farmers’ associations in 2003 and reports were received that other producers followed their lead. A simple onion store was co-financed in 2005 with encouraging results – the owner intending to double its capacity in the coming year. Not only does he anticipate the advantage of overall higher prices for his produce – but the advantage of spending less time on marketing itself and under less pressure – especially around the busy harvest period. An initial foray into apple storage in 2005 was not the most successful intervention of the Project – but highlighted the need for it to put greater focus on this activity. A co-financed cool store for a large green house operator is under construction and is expected to provide useful lessons for the industry.

*Processing:* Production to supply large-scale processors is thought to be premature in Kosovo – producers being advised to aim for the relatively lucrative fresh or stored market in the medium term. Small and medium-scale processing carried out by farming families or rural women’s associations, on the other hand, offer considerable potential. Confidence in the attractiveness and medium-term prospects for soft-fruit jam production has been thoroughly established only two years since the enterprise was introduced to clients. Indeed, for raspberries and blackberries jam is likely to be the main form in which the crop will be sold. Farming families have been considerably increasing their net returns to their soft fruit enterprises by adding jam as a component. Encouraging results are also being achieved through the introduction of medium-scale pickling of vegetables – especially to women’s associations whose members are already involved in vegetable production.

The Project needs to invest considerably more effort in the promotion of best practice in post-harvest, storage and processing.

*Marketing*

*Initial situation*

During the old Yugoslav times the consumption of fruits and vegetables outside the ‘traditional’ harvesting seasons was minimal – the population relying instead on preserved products for most of the year. Moreover, what limited imports of fresh fruit and vegetables did exist were controlled by government through quotas given to a limited number of companies.

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12 See Chapter 7 – Results and potential impact.
Local production between 1999 and 2000 was almost inexistent while neighbouring countries took advantage of the situation to establish complete domination of the market – especially with the introduction of fresh produce in months hitherto considered 'off-season'. A particular attraction for them was Kosovo’s hard currency – the German Mark.

The local vegetable production sector that re-emerged after the war was characterised by a concentration on the two traditionally-exported products – green peppers and tomatoes – and a short season of production – mainly just from July to August. In addition products were generally not graded, not properly packed, of low quality and sold only through direct channels (roadside markets, local markets). Market information, moreover, was not available to producers.

A similar situation existed with fruits, ornamentals and herbs.

**Strategy**

The strategy adopted during the *pilot phase* was centred around identifying the bottlenecks in horticultural production and marketing - ie identifying the problems and the potential and looking for ways to promote the industry. The *second phase* gave increasing emphasis on developing market information and communication and also to increase linkages between the sector’s different actors. The *current phase* is characterised by improvements in the marketing of specific horticultural products with additional attention being paid to brand names and quality standards.

**Activities**

A range of innovations in marketing were introduced.

*Collection and dissemination of market information*

Weekly monitoring of the wholesale and retail prices in the Pristina market has been continuous since March 2001 and is, till the present time, the only source of such information in Kosovo. This data series has been available on the Project’s web-site since December 2002.

Considerable interest has been expressed in this information with 80 different requests being received for regular mailing within three months of the start of dissemination. The information is frequently quoted in government and consultancy documents – and has constituted a major influence on project decisions.

*Market surveys*

Five market surveys have also been undertaken to combat the general lack of knowledge of the market. They have involved two market demands surveys (2001, 2002), two consumer surveys (2001, 2004) and one rapid market appraisal for clients (2005). These surveys have been critical in defining project approaches and priorities.

*Crop market profiles*

This information and knowledge accumulated by the Project from the above activities - as well as its close involvement with the promotion of individual products - have been used to start establishing market profiles of individual crops. These profiles present – for the crop in question – estimates of market volume, weekly price trends over the previous three complete years, proportion of the market obtained by imports, source and timing of imports, characteristics of the products and their packaging, local marketing channels, consumer preferences – as well as an overall analysis. Profiles have been completed for strawberries, onions and tomatoes – while the apple profile is under preparation.
Packaging development

Packaging and labelling have been developed and introduced to clients in order to help them position themselves in the market. When successfully introduced, clients are encouraged to organise the design of labels and to order the packaging themselves.

The rate of adoption of the improved packaging has varied greatly between products and between clients. Good packaging is generally recognised as facilitating sales or attracting higher prices – or a combination of both. Factors mitigating against its use, however, include its cost (that has to be paid up-front) as well as the labour involved in the associated grading and cleaning (often occurring as it does during the busy harvesting season). The different marketing channels used, in addition, have their own varying requirements regarding the standard of packaging. Debellde strawberry producers used the project-developed packaging and labelling at the beginning of the 2005 season in the local town of Viti – but Pristina wholesalers – having read the producers’ address on the labels - soon began regularly visiting the production site themselves and buying in bulk.

The Project has concluded that improved packaging is a key factor in successfully introducing a new product to the market and also gives an extra advantage when pitted against strong competition. In some cases, however, where the local product has already developed a distinctive edge over imports – as is the case of strawberries based on their quality – produce can be successfully sold without the added expense of good packaging. In such cases, however, producers will be able to reintroduce improved packaging when the competition heats up – as it surely will.

A large proportion of clients now have the experience of ordering packaging and labelling themselves.

Branding

Branding has been introduced in collaboration with the Horticultural Promotion Group with the slogans ‘Nga toka jone’\(^\text{13}^\) and ‘Natura’. The Fragaria Association of soft-fruit producers near Gjakova has similarly been assisted to develop the brand name ‘Frageria’ for fresh soft fruit and ‘Freskia’ for soft-fruit jam.

The promotion of such brands will remain problematic, nevertheless, in the absence of the legislation to register and protect brands as well as the low level of trust common between actors.

\(^{13}\) ‘Produce of our land’
Project promotion and market linkages

Individual products have been promoted and linkages encouraged through field days and open days as well as through co-financed participation of producers in agricultural fairs. Experience has shown that such actions are highly effective.

More details of the generic activities as well as the promotion of the marketing of individual products are presented in Annex J.
5. Strategy 2005/6 and progress

An internal strategy review in mid-2005 concluded that the situation half-way through the last phase was as follows. ‘The value chains of most components are sufficiently advanced to allow for their completion by the end of the project – with some of them being able to show at that time a modest amount of expansion within the vicinity of their introduction. The value chains of two important components – soft fruit and top fruit – have already been completed and, if scaled up could generate substantial amounts of employment.

‘SPHP-K has been working on five sets of value chains for the last four years – vegetables, soft fruit (eg strawberries), top fruit (eg apples), ornamental plants and herbs & teas. By mid-2005 the value chains for two of the five components (soft and top fruit) have been basically completed while further work is still needed to complete the value chains of the other components by the end of the project period.

Vegetables

‘Many of the techniques introduced by the project are being used successfully – although most still on a small-scale. In some cases innovations suddenly catch on a number of years after introduction. More success has been achieved with the introduction of new techniques and materials (fleece for insulation, drip irrigation) than with varieties. Marketing is proving a particular challenge for fresh vegetables – but not so much for field crops.

‘The considerable investment over the last three years in developing carrot production with one association near Peja is producing meagre results – largely, it is thought, due to the strategy of the early years of the Project of working with associations that turned out to be artificially created - and to an unsatisfactory selection of clients. Better results are developing more recently, however, amongst old clients in Rahovec Municipality whose production – although on a small scale – is impressive. The challenge will be to encourage the expansion of their area.

‘Garlic production techniques continue to improve – but problems remain with the high price of the cloves (planting material) of the introduced variety, the absence of local multiplication and the lack of alternative varieties.

‘Mono-cropping of white beans shows little sign of expanding – largely due to the high labour requirement for plant support, harvesting and threshing.

‘There has been a rapid increase in the number of simple poly-tunnels in the Mamusa area (now estimated to be around 60 ha). 80% of this area is reported to have been equipped with drip-irrigation in just the last 12 months – three years after the Project started promoting the technique. Farmers are largely targeting the early production of tomatoes and cucumber to exploit the high-priced June market currently dominated by imports.

‘Advanced poly-houses have been utilised for the Project’s successful introduction of lettuce cultivation utilising a wide range of new techniques and varieties and benefiting considerably from the energetic marketing of clients. The development of the vegetable seedling industry has arisen from the same base and proved equally successful.

Soft fruit

‘The strawberry value chain is now considered largely completed – although the import of mother plants (for further multiplication) has not yet been managed entirely by clients. A Pick Your Own (PYO) marketing approach is being introduced – and appears appropriate for large fields. Scaling up near the Macedonian border is proving successful
– six clients producing 12 tonnes from 0.87 ha. It is still to be seen whether they will reinvest their income in expansion.

**Top fruit**

‘The basic elements are now largely in place to allow for the expansion of modern top-fruit orchards in Kosovo – including mother trees, stool beds, nurseries, demonstration orchards of 60 varieties of apple, pear, plum and cherry. A hole-making machine (co-financed by the Project) was successfully utilised by a service provider. Service providers were utilised to assess the performance of the 14 demonstration orchards to provide information for further technical advice – including the choice of varieties - and to establish business plans. The Project was involved in the Ministry’s working group on a national fruit strategy – the first draft being issued in June 2005.

**Ornamentals**

‘The Project has been instrumental in promoting the establishment of a semi-modern ornamental industry in Kosovo – with seedling producers emerging as the key driving force – often playing a significant role in marketing of the products of out-growers’. A start has also been made on promoting the development of out-growers for both bedding plants and cut flowers – involving 10 women in urban areas.

‘One industrial compost producer has now established a foothold in the market and small-scale worm compost production is starting to show its potential after a moribund start.

**Herbs and Teas**

‘The Project’s key client – Agroprodukt – is now cultivating 8 species of herbs (*Basilicum, Lavender, Valerian, Menthe, Marshmallow, Oregano, Sage and Melissa*) over 2.5 ha – the first commercial production (as opposed to collection from the wild) in Kosovo. This year the Project has supported seedling production as the only local source for planting material for herbs & teas in Kosovo and as a tool for expanding production in other areas.

‘An outline of an agreement with two other projects involved in promoting the herbs sector – one financed by GTZ and the other by USAID – points to SPHP-K focusing on promoting the cultivation of herbs. The other projects would take responsibility for the more expensive aspects of collection from the wild, processing, marketing and credit.

**Marketing and economics**

‘The marketing of *vegetables* appeared to be the largest constraint facing the objectives of the project. A consultancy was fielded in January to assess the situation and came up with the following recommendations:

- **Production Planning** – informing clients of the impact of alternative production technology for spreading the harvesting date of crops to higher-priced periods;
- **Crop market profile** – informing clients of the market requirements throughout the year for individual crops;
- **Trader Database** - creating a contact database for clients of the main actors: traders, distributors, wholesalers, retailers; and
- **Feasibility study of a farmer-owned pack house** – to investigate the feasibility of promoting the establishment of a producer-owned pack house to supply wholesalers and supermarkets.

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14 Responsibilities for plant production divided between the nursery owner who produces the seedling and the out-grower who produces the final product.
A start has been made on the first three activities. The internal strategy review carried out in the first semester, 2005, however, provided further insights into marketing. The main issues with field crops, for example, remained one of production rather than marketing.

Interventions in the soft fruit sector involved packaging support to the scaling up area of Debellde and a Pick Your Own marketing exercise in the more established area of Babaj Bokes. Older clients were using the improved packaging only intermittently – putting in question its utility. It appears, however, that locally produced strawberries are gaining such recognition for quality that the extra competitive edge provided by good packaging may be superfluous – at least for the time being. A Pristina supermarket was eventually selling Babaj Bokes strawberries for € 1.50/kg and Macedonian for € 1.00.

The weekly monitoring continued of fruit and vegetable prices in the Pristina market that had started in 2001.

**Integrated Production (IP)**

The Project is collaborating closely with the Ministry of Agriculture regarding the introduction of Integrated Production in Kosovo – after having commenced IP activities in the previous 2004. The Ministry has formed a steering committee to promote both the development of national regulations and technical guidelines and to introduce the technique practically in the field. Support from CABI, Switzerland, is being provided for both components – with three missions being carried out in the first six months of the year.

CABI ran a training of facilitators’ course for IP Farmer Field Schools in March – with participants from the Ministry, municipalities, service providers, key farmers and the Project. Two FFSs started in June on open-field tomatoes in Mitrovice and Gjilan with nine farmers at each site and with key farmers and project staff acting as facilitators.

**Women and minorities**

The Project defined its gender objective and strategy within the framework of the overall objective and strategies in an internal workshop in March, as follows:

- **Gender objective** - farming businesses benefit from practical and strategic changes in gender relations.
- **Gender strategy** - providing opportunities for practical and strategic changes in gender relations within farming families.

Practical changes covered improvement in the efficiency or ease of horticultural operations whether men or women are involved. Regarding women - strategic gender changes involve an improvement in their status and self-esteem within the family.

Project activities undertaken by women as businesses in their own right – with the women responsible for the planning, decision making, and execution and profit-making, are as follows:

- processing soft fruits (strawberry and raspberry) – 2 sites: Babaj i Bokes and Debellde
- bedding plants and cut flower production – 6 sites: Skenderaj, Lypjan, Mitrovica, Peja, Suhareka and Babush Muhaxhereve.
- Training on vegetable processing and marketing – women’s association Hareja, Rahovec.

**The need for scaling up**

It was realised that the establishment of value chains had, in fact, generated little employment – since the chains were of a pilot nature and, necessarily, on a small scale.
The value of the work done in the last four years lies, rather, in the considerable potential that it offers once the value chains are scaled up. The importance was recognised of starting to scale up at least two value chains in the last two years of the Project in order to both show the considerable economic and employment benefits that these new productive activities could offer as well as to provide more understanding of how such scaling up could be nurtured.

‘Although the bulk of scaling up of successful enterprises is expected to occur through word of mouth and simple copying, outside intervention in the first two years is necessary to considerably speed up the process. This scaling up has to start now – and quickly – if Kosova farmers are to have any chance of catching up their neighbours (such as Serbia and Macedonia) and of gaining a strong foothold in the local and regional horticulture markets.’

SDC subsequently provided the Project with an additional CHF200,000 for the second semester, 2005, in order to implement the above strategy. The results of this implementation are presented in the respective annexes of the individual components.
6. Results & potential impact

It is now beginning to be realised - in quantitative terms - how great a contribution the horticulture sector could make to rural income and employment generation in Kosovo. Not only are the enterprises under consideration likely to give attractive returns, they also require considerable amounts of labour and have the potential comparative advantage to capture much of the local market from current imports. It is hoped that some may prove sufficiently competitive to offer opportunities for export.

Based on the information gathered over the last five years and the experience with developing value chains and scaling up, the Project is now able to start estimating the sort of contribution that the scaling up of successful value chains could make to the economy. Such estimates are presented below for three out of the ten value chains on which the project is working – carrots, strawberries and apples.

What has now been learnt about the piloting of new varieties and techniques for carrot production gives reasonable grounds to believe that the cultivation of this crop by normal farm families could expand within four or five years to cover 190 hectares and capture 50% of the Kosovo market. Once all the ancillary services are included – advisory service providers, machinery hire, input suppliers and traders – the total number of jobs created would amount to 78 while the net income added to the national economy each year would be around €1,150,000. These jobs and this income, moreover, would benefit mostly the rural areas.

A similar understanding in the case of strawberry production (when scaled up to 48 ha) suggests that the total number of jobs created within a few years would amount to 35 while the net income added to the national economy would be €780,000 per year - €190,000 of that being from small-scale jam production alone.

The equivalent figures for apples – if production were to expand by 500 ha – indicates that the total number of full-time jobs created within 5 years would amount to 400 while the net income added to the national economy would be around €7.6 M each year for the 25 years of the life of the orchards.

These calculations use conservative estimates of yield and prices and information from business plans developed on the basis of the experience of project clients. Work is ongoing to estimate equivalent benefits from the other value chains.
**Carrots**

Commercial carrot production has been introduced by the project as an employment and income generating activity for rural families. Four carrot clients in Rahovec cultivated a total area of 1.5 ha in 2005 and harvested and marketed 60 tonnes. The information collected from these clients has been used to develop crop costing and business plans that have, in turn, indicated the potential of the carrot industry to generate income and employment. The calculations of potential have used cautious prices and yields based on a separate risk analysis. The prices of carrots used, for example, is taken as €0.20/kg and the yield as 36 t/ha (whereas the clients actually achieved €0.25 /kg and 40 t/ha).

One hectare of carrot – a good economic size for a farm family – would provide the equivalent of 59 days of employment per year (worth €884 at €15/day) and produce a net income in excess of this of €4,116.

### Potential impact of the introduction of carrot production

<table>
<thead>
<tr>
<th></th>
<th>ha</th>
<th>Market share</th>
<th>On-farm labour days</th>
<th>On-farm labour</th>
<th>Net income</th>
<th>Total income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single 1 ha farm</td>
<td>1</td>
<td>0%</td>
<td>59</td>
<td>884</td>
<td>4,116</td>
<td>4,999</td>
</tr>
<tr>
<td>Current project clients</td>
<td>1.5</td>
<td>0%</td>
<td>88</td>
<td>1,325</td>
<td>6,173</td>
<td>7,499</td>
</tr>
<tr>
<td>Future potential area</td>
<td>190</td>
<td>50%</td>
<td>11,191</td>
<td>167,865</td>
<td>781,945</td>
<td>949,810</td>
</tr>
</tbody>
</table>

It is calculated from market volume data that 50% of the local market would be captured if production were to expand to 190 ha. At this point the combined income from carrot production (value of jobs created and net income) would amount to €949,810 every year. Once all the ancillary services are included – advisory service providers, machinery hire, input suppliers and traders – the total number of jobs created would amount to 78 while the net income added to the national economy each year would be €1,150,944. These jobs and this income, moreover, would benefit mostly the rural areas.

### Future potential impact of the carrot production – 190 ha

<table>
<thead>
<tr>
<th></th>
<th>Labour years</th>
<th>Value of income derived in € / year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Labour income</td>
</tr>
<tr>
<td>Production</td>
<td>48.0</td>
<td>167,865</td>
</tr>
<tr>
<td>Machinery service</td>
<td>6.5</td>
<td>22,515</td>
</tr>
<tr>
<td>Input supplier</td>
<td>3.7</td>
<td>12,740</td>
</tr>
<tr>
<td>Marketing</td>
<td>19.7</td>
<td>68,400</td>
</tr>
<tr>
<td>Total</td>
<td>78.0</td>
<td>271,520</td>
</tr>
</tbody>
</table>

15 One working year is equivalent to 231 working days
16 Net income to machinery hirer imputed at 10% of machinery charge
17 Labour utilised by input dealer imputed as 5% of cost of inputs
18 Net income of input dealer imputed as 5% of cost of inputs
19 Labour utilised by marketing imputed as 5% of the farm gate sales
20 Net income of marketing imputed as 5% of the farm gate sales
Italicsed figures are imputed
**Strawberries**

Commercial strawberry cultivation has been introduced by the project as an employment and income generating activity for rural families. In 2005, 39 clients cultivated 9 ha and captured 17% of the local market. 7 tonnes of jam were produced and marketed.

Data collected from clients has been used to develop crop costings and business plans that have, in turn, indicated the potential of the strawberry industry to generate income and employment.

One hectare of strawberries – a good economic size for a farm family – would provide the equivalent of 90 days of employment per year (worth €1,350 at €15/day) and produce a net income in excess of this of €8,811. In addition, processing 20% of the farm’s production into jam would create 15 days of employment and net a further €3,744.

**Potential impact of the introduction of strawberry cultivation**

<table>
<thead>
<tr>
<th></th>
<th>Value in € / year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ha</td>
</tr>
<tr>
<td>Single 1 ha farm</td>
<td>1</td>
</tr>
<tr>
<td>Current project clients</td>
<td>9</td>
</tr>
<tr>
<td>Future potential area</td>
<td>48</td>
</tr>
</tbody>
</table>

It is calculated that 90% of the local market would be captured if production were to expand to 48 ha. At this point the combined income from strawberry production (value of jobs created and net income) would amount to €484,150 every year – with jam production adding a further €188,772. Once all the ancillary services are included – advisory service providers, nurseries, machinery hire, input suppliers and traders – the total number of jobs created would amount to 35 while the net income added to the national economy would be €784,272. These jobs and this income, moreover, would benefit mostly the rural areas.

**Future potential impact of strawberry cultivation – 48 ha**

<table>
<thead>
<tr>
<th></th>
<th>21</th>
<th>Value of income derived in € / year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lab years</td>
<td>Labour income</td>
</tr>
<tr>
<td>Production</td>
<td>18.6</td>
<td>64,324</td>
</tr>
<tr>
<td>Adv. Ser. Provision</td>
<td>0.6</td>
<td>12,706</td>
</tr>
<tr>
<td>Nurseries22</td>
<td>1.3</td>
<td>4,423</td>
</tr>
<tr>
<td>Processing (jam)</td>
<td>3.0</td>
<td>10,363</td>
</tr>
<tr>
<td>Machinery service</td>
<td>0.3</td>
<td>1,191</td>
</tr>
<tr>
<td>Input supplier</td>
<td>2.0</td>
<td>6,809</td>
</tr>
<tr>
<td>Marketing</td>
<td>9.2</td>
<td>32,019</td>
</tr>
<tr>
<td>Total</td>
<td>35.0</td>
<td>131,834</td>
</tr>
</tbody>
</table>

21 One working year is equivalent to 231 working days
22 Only 33% of the total 48 ha will require replanting in any one year
23 Net income to machinery hirer imputed at 10% of machinery charge
24 Labour utilised by input dealer imputed as 5% of cost of inputs
25 Net income of input dealer imputed as 5% of cost of inputs
26 Labour utilised by marketing imputed as 5% of the farm gate sales
27 Net income of marketing imputed as 5% of the farm gate sales
Apples

Crop costing, yield assessments and current market prices allow for a determination of the likely impact of apple production at the individual farm and national levels. Income and costs are conservatively taken over the first 15 years of the life of orchards — even though the latter will have an optimum economic life of 25 years. Inflation is not taken into account.

Over the first 15 years of the life of a one hectare orchard — a manageable size for a farm family — the latter could expect an average net income of over € 11,000 p.a. as well as paid employment equivalent to half a man-year. The value of the latter when added to the net income would provide the family with an income of almost € 13,000 p.a. Annual income in years 15-25 is likely to be still higher since the establishment costs would not be included and yields would only start to decline gradually after the 20th year.

<table>
<thead>
<tr>
<th>Potential impact of introduction of an apple orchard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value in € / year</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>Single 1 ha farm</td>
</tr>
<tr>
<td>Current project clients</td>
</tr>
<tr>
<td>Future potential area</td>
</tr>
</tbody>
</table>

Should the new apple industry expand to cover 500 ha (foreseeable within five years) — thus meeting 75% of the local market — the total additional income to the actors concerned (orchardists, service providers, input suppliers and traders) would amount to € 7.6M per year over the first 15 years.

<table>
<thead>
<tr>
<th>Future potential impact of apple orchard establishment — 500 ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of income derived in € / year</td>
</tr>
<tr>
<td>Production</td>
</tr>
<tr>
<td>Machinery service</td>
</tr>
<tr>
<td>Input supplier</td>
</tr>
<tr>
<td>Marketing</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Italicised figures are imputed

28 One working year is equivalent to 231 working days
29 Net income to machinery hirer imputed at 10% of machinery charge
30 Labour utilised by input dealer imputed as 5% of cost of inputs
31 Net income of input dealer imputed as 5% of cost of inputs
32 Labour utilised by marketing imputed as 5% of the gross profit
33 Net income of marketing imputed as 5% of the gross profit
7. Future perspectives

Introduction

Rapid generation of income and employment is critical for the future stability of Kosovo. Horticulture is widely considered one of the sectors with the most potential for achieving these objectives – a belief that is being increasingly borne out by experiences coming out of the Swiss investment.

This investment, however, has been modest in comparison with the perceived potential and need. The duration of SPHP-K has been too short to allow for the full development of the enterprises undertaken (most obvious in the case of top fruit) and human resources have been meagre in comparison to the challenges.

The current approaches now being used, the result of five years of experience, are proving themselves pragmatic and constitute a solid basis for moving forward. Pilot-scale value chains of 10 products are completed or nearing completion – with some beginning to be scaled up. Further analysis of just three of the value chains (chapter 7) show the large potential gains in income and employment that are likely to arise as these enterprises multiply and expand. The Swiss are now well placed to make a significant contribution to the future stability of Kosovo through a programme of income and employment generation by tapping the potential uncovered over the last few years.

There is an apparent comparative advantage in the continuation, consolidation and expansion of the value chain promotion already started by SPHP-K. Such an investment is likely to produce increasingly attractive returns based, as it would be, on the investments already made over the last five years. The real benefits in terms of income and employment generation from VCs currently being worked upon will appear once scaling up has truly got underway. Undertaking the promotion of new value chains for other products would extend the benefit to other parts of the sector and also do so more cost-effectively on the basis of continuing the momentum and utilising the experience of the last five years of SPHP-K.

Much remains to be done, however, in creating an enabling environment for the horticulture sector. Kosovo’s double handicap of being, on the one hand, in a painful transition from a command to a democratic market economy while, on the other hand, recovering from a long and brutal clash with Serbia - has resulted in a feeble enabling environment. Future Swiss investment could be profitably directed towards addressing this weakness. Such support would benefit from the past and future presence of field-based projects promoting new value chains through VC actors.

Ideas for Swiss investment in Kosovo’s horticulture sector are presented below within these two general areas of future potential.
I. Further promotion of value chains

Further promotion of value chains through a field-based project would comprise three stages – (i) the completion and consolidation of the existing value chains that are showing promise, (ii) the further promotion of the enabling environment as a by-product of work on these value chains and, (iii) the replication of the current approach but for other products and crops identified as having particular potential in generating income and employment.

The completion and consolidation of the existing value chains - is seen in two steps – (i) the completion of existing VCs and, (ii) support in the initial stages of scaling up of the VCs.

EVCP 1: vegetables
- Lettuce – commence scaling up and move towards 100% local market penetration.
- Tomato – commence scaling up in order to recapture local market in months currently dominated by imports (April-June, Sept-November) – see also protected cropping.
- Carrots – commence scaling up in Rahovec & Podejevo to achieve true commercial production and capture 50% of local market.
- Onion – commence scaling up in Rahovec and Drenica, develop wide-scale storage, capture 90% of second semester local market.
- Garlic – complete value chain by consolidating local multiplication of cloves, develop wide-scale storage, commence scaling up in Rahovec/Xerxe.
- White beans – investment completed.

EVCP 2: soft fruit
- Nurseries – consolidate independence and quality of nurseries and expand to cover blackberries and raspberries.
- Strawberries – complete the direct support to scaling up in eight municipalities by 2006 and capture 70% market share.
- Raspberries & blackberries – complete value chain, scale up nursery production, continue scaling up of production till 2007 on 10 sites.

EVCP 3: top fruit
- Nurseries – expand and consolidate quality nursery production, import additional disease-resistant varieties.
- Apples – complete assisted scaling up by 2007 in 10 municipalities, develop storage capacities.
- Pears, plums, cherries – complete assisted scaling up in 10 municipalities by 2007.

EVCP 4: ornamentals
- Further promotion of nurseries (covering bedding plants, cut flowers and herbaceous) including growth rooms.
- Support service provision to further develop outgrowing.
- Expand industrial and worm compost through support to service providers.

34 See an explanation of this approach in Chapter 3
35 Existing value chain proposals
EVCP 5: Herbs & teas
- *Processing* – promote second processor in Dragash.
- *Sector association* – promote KOMAPA.
- *Market exploration* – in collaboration with KCBS.

EVCP 6: Value chain development of new products and crops
Analysis of value chains of other crops and products that could be considered as subjects of promotion are listed below. Further studies would need to be undertaken in order to verify the potential and to identify other products with employment and income potential.

- **Vegetables:** broccoli, spinach, cherry tomatoes, determinate varieties of white beans.
- **Soft-fruit:** blueberries, red currents, black currents.
- **Top-fruit:**
- **Nuts:** walnuts
- **Nurseries:** forest species

EVCP 7: Indoor production
- *Construction* – promote SME in greenhouse construction.
- *Fertilisation* – develop private advisory capacity for liquid fertiliser use and techniques.
- *Natural heating* – develop investment proposal for indoor production park located around Peja hot springs using hot springs as a source of heating. (This would be a Pilot project in preparation for larger-scale investment to utilise waste hot water around the Obiliq thermal generating plants.)

EVCP 8: Integrated production
- for selected vegetables and Top fruits. Introducing the practices of IP to a large number of producers for the expanded range of crops through such approaches as Farmer Field Schools.

EVCP 9: Storage and processing
- *Storage:* promoting private service provision and investment for the development of long-term storage for apples, onions and garlic – and short-term storage for fresh vegetables and soft fruit.
- *Processing* – promoting private service provision and investment related to the production of top-fruit and soft-fruit jams, freezing of soft-fruit, drying of herbs & teas.

II. Promoting an enabling environment for horticulture
The following areas of intervention have suggested themselves as necessary for the healthy and rapid development of the horticulture sector in Kosovo.

EEPA\(^{36}\) 1: Business support & Marketing intelligence\(^{37}\)
*Marketing* – a thorough appraisal is required of the structure and operations of the horticulture marketing system in Kosovo in order to determine what, if any, support might

\(^{36}\) Enabling environment potential areas
\(^{37}\) In previous versions EEPA 1 & 2 were placed under 'existing value chain promotions'
be required. EAR is about to launch such a project and consideration of Swiss investment in this area would best be done after the first year of the project. Of particular interest would be market exploration, market information (including prices), structural reforms and the promotion of local produce—working with the private sector—including service providers and market associations to:

- Promote local products.
- Provide market information.
- Improve quality control— including grading and packaging.
- Develop processing and packaging chains.
- Market information and opportunities

**EEPA 2: Private service provision** – the promotion of private service provision will become more of a reality with the increasing amount of scaling-up providing a critical mass of demand. The elements will include:

- **Input supply** – to encourage importers and input suppliers to make available quality products in a transparent manner— including planting material, agrochemicals, plastic and machinery.
- **Access to appropriate fertilisers** Building awareness of the fertilisation requirements. Promoting the private service provision of soil testing, analysis and fertiliser recommendations, its use by producers. Working with Government to encourage the import of a wide variety of appropriate fertilisers and Soil testing
- Promoting **machinery hire** in the private sector with the provision and promotion of specialised machinery new to Kosovo (bed-formers, onion set planters, onion lifters, carrot washers, vegetable seeders).
- Promoting the **establishment of top-fruit** orchards as a service developed by nursery owners.
- Providing start up support to the Kosovo Agricultural Development Association (KAD) – comprising existing SPHP-K staff plus certain service providers
- Contracting out Project scaling up responsibilities to service providers (possibly through the Kosovo Agricultural Development Association)
- Promoting private business service provision (business planning).

**EEPA 3: Education** – The forced disruption in horticulture linked with the 15 years of turmoil in the education system has resulted in poor levels of education affecting all aspects of the horticulture sector. Possible objects of investment include:

- **Vocational Training Centres:** curriculum development, field-linkages, structural support, training of trainers. (Swiss Caritas is funding the agricultural VTC, Gjakova, and has received support from SPHP-K in the training of trainers and in facilitating field visits; Swiss Contact manages the Vocational Education Support Project for SDC).
- **University of Pristina, Faculty of Agriculture:** curriculum development, study tours, training, equipment, links to Swiss universities, provision of research grants. (SPHP-K has frequently used the expertise of individual faculty members).
- **Electronic media:** production of educational programmes for television. (The national television and radio network has regularly featured SPHP-K activities to good effect – and has recently approached the Project regarding the joint production of an educational series on horticulture for television.)
- **Promotion of service providers** – promoting the provision of training in specific areas of competence as well as business management, promoting the demand for the services of SPs.

**EEPA 4: Credit** – encouraging commercial banks and micro-finance institutions to introduce credit products specifically for horticulture through the establishment of joint and structured pilot initiatives. The perceived risk to the financial institutions would be reduced through the provision of information regarding the financial feasibility of the investments and the marketing of its products with associated technical, business management and marketing advice provided to the borrowers. Products that are specific to horticulture, appear to have considerable potential and require credit include:

- Top-fruit orchard establishment, nurseries, greenhouse construction, storage (all of which are suitable for commercial credit) and
- Expansion of soft-fruit production (suitable for micro-finance institutions).

**EEPA 5: Support establishment of a Horticulture Information Centre** – to progressively move towards the establishment and self-financing of a one-stop Horticulture Information Centre – possibly operated by an association of service providers. The services that would eventually be provided by the centre (or centres) would include:

- Directory of actors (importers, input dealers, nurseries, machinery services, producers, transporters, processors, traders, credit institutions, advisory service providers, government departments).
- Technical bulletins and advice on variety and crop selection, soil management, crop production, crop protection, storage, processing, packaging, marketing.
- Problem solving, pest and disease identification and control.
- Credit advice, establishment of business plans.
- Farm management, book-keeping and contract preparation training.
- Market prices, exploration, trends and requirements.
- Information on local products.
- Legal advice.
- Means of communication would include brochures and booklets, web-page, electronic media, face-to-face or telephonic advice – and organised training.

**EEPA 6: National policy, strategy & regulations** – dialogue with, and support of, government. The component would cover:

- **Strategic planning**: identification of the comparative advantages of horticulture, planning for the development of the identified components (to complement the on-going EAR Agricultural Master Plan for Kosovo Project – AMPK).
- **National policy & regulations**: Fiscal regime, price and trade policy, investment prioritisation, environmental protection, quality control.

Such an investment by the Swiss would probably prove more effective, and diplomatic, if treated as a possible by-product of a field-based value chain project. Specific areas linked to the horticulture sector that need the institutional framework are:

**EEPA 7: Integrated production** – considerably more investment is required to build on the work done by MAFRD, CABI and SPHP-K – namely:

- Establishment of national regulations governing the application of Integrated Production;
- Development of national technical guidelines for an expanded range of crops.
• Training and developing a cadre of IP service providers.

EEPA 8: The nursery industry – a nursery industry that is healthy and transparent lies at the heart of the future success of the horticulture industry and requires considerably more nurture. It would cover top fruits, soft fruits, vegetables, ornamentals, herbs & teas. Of particular importance is:

• Introduction and application of the EU’s EPPO standards.
• Establishment and effective implementation of phyto-sanitary and quality controls on the sale and import of planting materials.
• Promotion of the use of high quality planting material by producers.
• Identification, importation, testing of new species and varieties.
• Upgrading skills in the industry.

EEPA 9: Lobbying & Horticulture actors’ representation – the promotion of representation of individual and collective VC actors will be taken up again after the failure of the approach experienced earlier in SPHP-K. A tentative start will be made with the Frageria strawberry association, soft-fruit nurseries, top-fruit nurseries, Rahovec vegetable producers and apple producers’ clubs. Elements promoted would include training and accompaniment in managing associations (establishing objectives, electing officials, managing finance, developing linkages and representation).

The formation of clubs or associations of producers of a certain crop would prove to be a useful channel of information and advice and of sharing ideas once the Project ceased the active support of scaling up.

The promotion of other aspects of the enabling environment is thought more appropriate indirectly through a spin-off of the promotion of value chains – including representation of actors, private service provision, access to appropriate fertilisers, input supply and marketing information and promotion.

EEPA 10: Tranversal theme: Gender and minorities

• The gender approach – refined in March 2005 as the promotion of practical and strategic gender changes within the framework of the Project’s other approaches and activities - will be continued.
• The minorities approach – will add ‘strategic’ to the previous ‘practical’ approach. The possibility will be explored, for example, of promoting collaboration between Serb and Albanian communities in the implementation of certain components - such as soft fruit.

EEPA 11: Poverty and equality initiatives.
Annex A

Related documentation

2000
Intercooperation, Offer – Horticulture in Kosovo: Quality production from seed to consumer,
November 2000.

2001
Intercooperation, Horticulture in Kosovo – Project documents – Phase I: February 1st 2001 –
GFA Terra Systems/stoas, Kosovo – Emergency Farm Reconstruction Project, Capacity Building
Component, Sub-sector review: Fruit & Vegetables, Food & Agriculture Organisation,
Department of Agriculture, Forestry and Rural Development, Kosovo, May 2002.
Laham, A., Working with minorities in Kosovo – concept paper of SDC, SDC, (final draft), July
SPHP-K, Quick market survey – assessing the market potential of winter vegetables grown in
SPHP-K, Consumption habits and purchasing behaviours of fruits and vegetables in Kosovo,
Efendija T., Identification of the types, varieties and rootstocks of pome and stone fruits cultivated
in Kosovo, November 2001

2002
Fischer, Ch. The market for fruit & Vegetables in Kosovo and Balkan Regional Market Study,
August 2002

2003
Efendija T., Identification of major pests and diseases for top and soft fruits, April 2003

2004
SPHP-K, Capitalisation of experiences – the case of the soft fruit industry in Southwest Kosovo,
SPHP-K, Capitalisation of experiences – the case of the bedding plant industry in Kosovo,
December 2004.


IMC, Promting sustainable local employment and rural development opportunities in Kosovo, European Agency for Reconstruction, December 2004


**2005**

SPHP-K, *Capitalisation of experiences – the extension service system adopted in vegetable production*, January 2005 (draft)


Annex B

Vegetables

The last two decades - with their continual crises affecting the region - did not leave the vegetable sector unscathed. Production had previously been closely linked to the industrial processing sector as well as to the machinery rings – and was pushed towards subsistence with the collapse of these cooperatives. The old Yugoslav market of 22 M people, that had taken vast quantities of a limited range of vegetables from Kosovo, had disappeared - to be replaced by a market of just 2 M people demanding the whole range of vegetables - a range that was being rapidly supplied by neighbouring countries unaffected by years of civil disturbance and war.

The re-invigoration of the vegetable sector was a priority right from the inception of the Project and the latter was faced with the task of providing actors with the knowledge and skills to successfully make the transition from a planned economy (where access to inputs, equipment and the market was a state responsibility) to an open market economy (in which the producer had to take responsibility for a much wider range of activities). The project intervention was primarily based on the hypothesis that improved skills and technologies would enable producers to better compete in quality, price and continuity of supply with imported products and therefore create more income and employment in the rural areas.

Implementation 2001 - 2003

One recommendation of the first market survey (Quick market survey) in 2001 was to support farmers in production and marketing of species that are known and partly known (in order to increase market share) but also to introduce to farmers species unknown so far in Kosovo.

Vegetables divided in three groups depending on awareness of the market

<table>
<thead>
<tr>
<th>Well known</th>
<th>Partially known</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabbage</td>
<td>Cauliflower</td>
<td>Celery</td>
</tr>
<tr>
<td>Spinach</td>
<td>Broccoli</td>
<td>Turnip</td>
</tr>
<tr>
<td>Leeks</td>
<td>Carrots</td>
<td>Field salad</td>
</tr>
<tr>
<td>Garlic</td>
<td>Beetroot</td>
<td>Radish (salad)</td>
</tr>
<tr>
<td>Onions</td>
<td>Lettuce</td>
<td>Swiss chard</td>
</tr>
</tbody>
</table>

The strategy followed in the first three years of the Project was characterised by:

- Working with farmers’ associations;
- Working through, and training, key members of the associations – or promoters - who were expected to pass on their knowledge and skill to their fellow members;
- Undertaking adaptation trials on a wide range of species and varieties – selected on the basis of market demand38;
- Introducing new appropriate technology and techniques; and
- Providing rather generous financial assistance to the associations.

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38 See Annex J - Marketing
Under this strategy, SPHPK has facilitated – with the assistance of up to 12 promoters - the implementation of more than 350 trials with around 70 farmers for the development and validation of technologies.

In 2001, and because of the time constraint common to the first year of any project, the technical focus was placed on the promotion of winter vegetables. The focus developed in 2002 switched to all-year-round (AYR) production. In 2003 the trials approach was modified towards the mother and baby approach. 2004 was considered a transition year during which the approach moved towards a concentration on just the six species that were considered to offer the most potential.

2001 – Trials and introduction of winter vegetables

In the first year the Project wanted to achieve the biggest impact possible through the testing and introduction of a range of winter vegetable species - numbering 6 (cabbage, cauliflower, leeks, spinach, onions and garlic) to four farmers’ associations. The results were promising initially but, due to the severe winter (down to -20°C), 40% of crops were lost. Two open days presenting results were organized (Prapaqan and Krusha e Madhe). The uptake by the associations’ members was not great – although the experience benefited other producers who were willing to grow the crops and added to the knowledge of the Project itself.

2002 – All Year Round Production (AYR)

The concept of AYR production was fully introduced in 2002 with trials aimed to test the technical feasibility of growing winter-hardy vegetables under the local agro-climatic conditions and also to demonstrate to farmers that there is an alternative to the massive summer production of tomatoes and peppers.

The project started to work with demonstrations with one promoter of each association assisting the project officer in the installation, monitoring and evaluation of the trials and demonstrations.

<table>
<thead>
<tr>
<th>Group</th>
<th>Location</th>
<th>Crop tested</th>
<th>ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perdrini</td>
<td>Krusha e Madhe,</td>
<td>Cabbage, carrots, spinach, leek, cauliflower,</td>
<td>4.9</td>
</tr>
<tr>
<td></td>
<td>Rahovec</td>
<td>garlic</td>
<td></td>
</tr>
<tr>
<td>Xerxe 2000</td>
<td>Xerxe, Rahovec</td>
<td>Onions, cabbage, cauliflower, leek, carrots,</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>spinach</td>
<td></td>
</tr>
<tr>
<td>Victoria</td>
<td>Prapaqan, Decan</td>
<td>Cauliflower, leek, cabbage, carrot, spinach,</td>
<td>5.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>garlic</td>
<td></td>
</tr>
<tr>
<td>Agroservice</td>
<td>Istog</td>
<td>Spinach, radish, lettuce, salad broccoli,</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>onion seed, green onion</td>
<td></td>
</tr>
<tr>
<td>Mamusha</td>
<td>Mamusha, Prizren</td>
<td>Spinach</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Four plastic poly-houses were imported (in addition to the two previously obtained) and these played an important role in demonstrating crop sequencing and the production of new crops and varieties indoors. During the year another two associations - specialised in garlic and onion production in Rahovec and Suhareka - joined the project activities.

Open days proved themselves strong tools to attract farmers, assess trial results, and build contacts and relations with other actors in the sector such as service providers, input suppliers, and institutional representatives. The media started to broadcast these activities more frequently thus developing a wider interest in the activities of the Project.
It began to be realised, however, that the group promoters were not providing the level of technical support to the other members of their associations as was expected – and few of them actually monitored the trials implemented by the other members. It was thought that this situation had developed, in part, because of a absence of clearly binding conditions and financial stimulation.

2003 – AYR & Mother and baby trials

As a result of the lessons learnt in the previous two years, more care was taken to select more dynamic and innovative farmers as promoters. A system was also developed of working with the promoters to operate mother trials while the promoters would also organise the establishment of demonstration plots on their own land as well as on the land of 3 or 4 other farmers (baby trials) in order to diffuse the technology. 15 pilot farmers demonstrated AYR production of vegetables while 7 farmers have demonstrated indoor crop rotation with seven species.

The Project was beginning to realise, however, that such promotion was not going to continue after the end of the Project unless a cadre of service providers was developed – especially for the areas of marketing, nurseries and technical advice.

Observations

The approach to the promotion of vegetables in the first three years of the Project aimed to recapture the local market through improved quality, increase in the range of products and better market presentation. The tools used have been:

- a) Introduction of new species & varieties in order to lengthen the harvesting period - subsequently increasing the market share,
- b) Improvement of pest and disease management through monitoring, use of resistant & tolerant varieties and selective pesticide use,
- c) Standardisation of the sowing of field crops, direct drilling and successional sowing,
- d) Improvement of container-grown seedling production along with the use of compost,
- e) Improvement of weed control through the introduction of new technology – mulches, hand & wheel hoes, weed burner and brush weeder,
- f) Introduction of protected culture, fleeces and poly tunnels, and
- g) Introduction of poly- and glass-house technology - heated for seedling production and unheated for crop production.

Analysis of progress indicated that the Project was spreading its efforts too thinly over too many species and also needed to give more attention to other links in the value chain.

A decision was taken to concentrate efforts on the six species that showed the most potential – namely, lettuce, tomato, carrot, onion, garlic and white beans. Yet even in the case of these selected species, their presentation in the market was weak – with the strong exception of lettuce. The project realised that, not only was it working with too many small non-commercial producers, but the market channels were still unclear.

Three other levels of intervention were therefore decided upon for 2004 – the year being considered a transition from the pilot farmer approach:

- Six nurseries were supported with technical advice, high quality seed and small equipment to improve skills and increase their capacity to produce high quality seedlings and certified garlic cloves and, in addition, business linkages between them and growers were promoted;
Demonstrations were carried out with 6 pilot farmers through the services of a private service provider - while the project continued the same exercise with another 12;

A carrot producer was supported to obtain a washing and packaging unit with the expectation that he would hire it out to other producers - and a home-made conserves distributor was supported with her business.

The rest of this annex presents the progress achieved with the six priority species.

1. Tomato

An improvement in the tomato value chain was to be achieved through expanding the presence of the product in the local market through better quality via improved production and post-harvest handling techniques and better presentation through grading, calibrating and packaging. Experienced farmers were chosen to implement this new approach rather than working through the associations. The various technical approaches used are described below – those affecting post-harvest and marketing are covered in their respective annexes.

New varieties

Traditionally Kosovar consumers prefer large vegetables – especially in the case of tomatoes. Their point of reference is the old Jabucar variety - synonymous for great taste, colour and cooking characteristics. In order to fulfil this local market requirement tomato growers have traditionally used this indeterminate ‘butcher’ cultivar – harvested mainly in peak of the summer season. The Project introduced new types and varieties and tested them both in the field and in the market.

23 indeterminant varieties were introduced and included 11 ‘Butcher’, 9 ‘Truss’ and 4 ‘Cherry’ types using seed imported from Western Europe and Israel. All varieties were chosen with high resistance and tolerance to diseases, longer storage, uniform truss ripening, improved transport hardiness, colour and taste. The large majority were grown in unheated poly-houses and in the open field.

Introducing hybrid seed posed a considerable challenge with traditionally vegetable growers who, in the past, have not invested in quality seed. Market testing produced largely negative results for the new ‘truss’ and ‘cherry’ types – leading the Project subsequently to concentrate on the large butcher type.

Seedling production

Tomato growers had poor seedling production practices – simply scattering seed densely on raised beds leading to ‘leggy’ seedlings that suffered setbacks when transplanted. Improved material and techniques were introduced to overcome this problem. Fleece was used to increase the inner temperature inside the ‘raised bed tunnel’ and to protect from late frost. Quick pots for transplanting were used to move away from bare-rooted transplanting – particularly for the six bigger poly-house owners and the commercial seedling growers. Improved substrate preparation was explained. These introductions rapidly improved the quality and value of seedlings – so much so that seedlings for sale started to become a major commodity.
Training systems
Modern systems of training the growing tomato plants were introduced. Tying and clipping leads to the plants having less injury on the stem and bunches thus reducing the risk of disease. De-leafing limits the size of these indeterminate varieties, increases air circulation and reduces humidity. De-fruiting leads to larger and more equal growth of fruits as well as uniform ripening on each cluster.

Adoption of the training systems is, however, low, partly due to non-availability of clips in the local market. De-leafing and de-fruitering has still not been adopted as a standard treatment because farmers put more value on reducing working hours than producing higher quality.

Weed control
The use of mulch – including plastic mulch – was introduced to control weeds in both poly-houses and the open field. The practice also reduces water use, humidity, fungal disease and labour requirement.

Adoption of mulching has been widespread with both direct and indirect clients. The increasing availability of different plastic mulches in the market has also promoted awareness. Open field trials (2005) in Rahovec increased the interest of other farmers to use of the mulch in order to be earlier in the market (by at least two weeks).

Drip irrigation
Drip irrigation was introduced in the four donated poly-houses in 2003 as well as to the other promoters. There was immediate acceptance of the equipment by those who received it as it could replace the old flooded irrigation technique that led to considerable use of water but, more seriously, to high fungal disease levels. The wider adoption of the practice was slow to take off – but mushroomed in 2005 once equipment prices dropped abruptly.

Soluble fertilizers and foliar feed
A partial introduction was made of utilising soluble fertilisers through the new drip irrigation systems – using the currently available chemical fertilisers - as NPK 15:15:15, KAN and urea. Uptake was limited – and is expected to continue as such until specific soluble fertiliser is more freely available on the market. Supplementary foliar feeding – that was available in the market – are used by farmers with other pesticides in plant protection.

Observations
Considerable progress has been achieved in improving the quality of tomato production of those farmers to whom it was introduced - most, for instance, being unlikely to revert to the old method of raised bed seedling production. Now, farmers use raised bed to raise the seedlings until the first real leaf and then transplant into the quick pots until the first flower stage, then transplant in permanent plot. The main beneficiaries, however, have been the more innovative producers who have been willing, and able, to invest further in the technology and to expand production. More traditional farmers, on the other hand however, seemed to be adversely affected by the progressive decrease in the level of the Project’s support to individuals - being poorer and risk-averse and used to donations – points aggravated by the relatively high input and equipment prices at the time.

Secondary adoption has been initially slow to take off - but, the case of the relatively poor Mamusha village indicates that once it starts it can be extremely rapid. During 2005 alone 80% of tomato farmers are reported to have invested in drip-irrigation and 40% of poly-house construction, involving 1,075 poly-houses (each of average 400 m²) and covering a total of 43 ha. The trigger for this sudden adoption appears to have been the observation of
drip-irrigation and its advantages with a few early adopters, the experience of one innovator being able to harvest earlier in the season thus attracting higher prices and the marked reduction in the price of drip-irrigation equipment in the market.

Neither the new types of tomatoes (truss and cherry) nor the new varieties of the accepted type (butcher) that were introduced found acceptance amongst farmers.

**Tomato summary**

**Initial situation (2001)**
Tomatoes are the second most important vegetable crop in Kosovo (after peppers). Traditional outdoor production was concentrated in the Dukagjini valley – with harvesting being concentrated between July and October resulting in a peak that depressed fresh market prices.
Polyhouse tomato producers in a small scale were concentrated in the areas of Gjilan, Istog and in the central part of the country. In Mamusha village, Rahovec Municipality, producers started erecting simple low-structured cold tunnels, targeting early production and achieving much better price.
Both indoor and outdoor production used indeterminate butcher tomato varieties of Dutch origin.
Seedlings were produced in raised hot beds under small tunnels and heated with electric bulbs or wood stove. Bare rooted seedlings were transplanted right after the frost period ended. Yields were typically 60t/ha and prices average to 0.8/kg.

**Objective of value chain:**
The value chain aims at achieving higher returns through:
- Higher prices as a result of a spread of harvesting dates of xx months with the use of variety selection and improved technology, post-harvest, packaging and marketing;
- Higher yields and lower costs through improved technology.

**Evolution of the Programme**

<table>
<thead>
<tr>
<th>Year</th>
<th>Nb. Clients involved</th>
<th>Hectares covered</th>
<th>Av yield t/ha</th>
<th>Prod tonnes</th>
<th>% value chain completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>6</td>
<td>0.41</td>
<td>60</td>
<td>24</td>
<td>0%</td>
</tr>
<tr>
<td>2003</td>
<td>10</td>
<td>1.80</td>
<td>70</td>
<td>125</td>
<td>15%</td>
</tr>
<tr>
<td>2004</td>
<td>13</td>
<td>1.55</td>
<td>75</td>
<td>120</td>
<td>53%</td>
</tr>
<tr>
<td>2005</td>
<td>10</td>
<td>1.50</td>
<td>80</td>
<td>120</td>
<td>69%</td>
</tr>
<tr>
<td>2006 expected</td>
<td>12</td>
<td>1.80</td>
<td>85</td>
<td>153</td>
<td>85%</td>
</tr>
</tbody>
</table>

**Evolution of the value chain**

<table>
<thead>
<tr>
<th>Element</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006 est</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of improved F1 varieties</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Access to reliable seed</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Improved seedling production</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Improved transplanting techniques</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Indoor production</td>
<td>o</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
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<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Effective weed control (mulching)</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>t</td>
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<td>Effective irrigation (drip)</td>
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<td>o</td>
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<td>Access to market</td>
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<td>o</td>
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<td>x</td>
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<td>o%</td>
<td>o%</td>
<td>15%</td>
<td>53%</td>
<td>69%</td>
<td>85%</td>
</tr>
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</table>

39 o = not tried, t = being tried out, x = being used confidently by at least three producers
2. Lettuce

Production of this green-leaf crop was, in the past, limited to seasonal household cultivation that, together with spring onions, offered the first fresh vegetables after a long winter consuming just pickles. They were subsequently replaced later in the season with fresh tomatoes and peppers. In 2001 small quantities of lettuce of the butter head type were available but of poor quality. The situation started to change with the arrival of imports responding to the demands of the new international community – and this, in turn, influenced the consumption habits of the local population.

The Project selected innovative producers who had a sense of the market in order to develop this crop in-country and started to implement trials on different varieties and cultural practices in 2002.

New lettuce types and seed hybrids

The varieties tested and introduced offered new characteristics demanded by the market – such as more attractive shapes and colours, thicker leaves and increased sharpness of taste. Both ‘short day’ and ‘long day’ types were introduced with specifications suitable for indoor production (cold, cool and warm) and for open-field production (including specific seasonal harvest times covering July and August). Most of the hybrids imported exhibited resistance/tolerance to major fungal diseases. Collaboration with input suppliers and service providers has led to the regular importation of genuine lettuce seed.

Production techniques

The various improvements in seedling production proved critical to the development of the local lettuce industry and included the use of seedling quick pots, improved substrate and fleece – the latter being also used heavily in allowing cold early and cold late production. Also critical were drip irrigation and, for weed control, woven black plastic mulches that allowed better air circulation and humidity control and resulting in cleaner heads not requiring washing before sale.

Observations

These production initiatives of the Project – along with those of marketing – have resulted in the establishment of a small commercial lettuce industry that is capable of capturing the bulk of the local market thus substituting imports and creating employment. Locally-produced lettuce is now available in the local market for 11 months during the year. The proportion of the local market captured by local production has not yet been surveyed.
## Lettuce summary

**Initial situation (2001)**

Only lettuce type (butter-head) was known and was typically produced by households for their own consumption – not being cultivated commercially. It was included on the menus of restaurants but sourced from imports. An increasing demand in the fresh market encouraged some innovative farmers to start production in poly-houses. This development was supported by the project which introduced new production technology to allow successional sowing.

**Objectives of value chain (VC)**

The value chain aims at achieving higher returns through:

- Higher prices as a result of a spread of harvesting dates of 9 months with the use of variety selection and improved seedling technology, post-harvest, packaging and marketing;
- Higher yields and lower costs through improved technology.

### Evolution of the Programme

<table>
<thead>
<tr>
<th>Year</th>
<th>Nb. Clients involved</th>
<th>Hectares covered</th>
<th>Av yield heads/ha</th>
<th>Period covered (months)</th>
<th>% value chain completed</th>
</tr>
</thead>
<tbody>
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<td>15,000</td>
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<tr>
<td>2004</td>
<td>11</td>
<td>0.95</td>
<td>20,000</td>
<td>7</td>
<td>33%</td>
</tr>
<tr>
<td>2005</td>
<td>9</td>
<td>1.20</td>
<td>20,000</td>
<td>8</td>
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<tr>
<td>2006 expected</td>
<td>12</td>
<td>1.80</td>
<td>22,000</td>
<td>9</td>
<td>77%</td>
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### Evolution of the value chain

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<th>2003</th>
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<th>2005</th>
<th>2006 est</th>
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<td>t</td>
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<td>t</td>
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<td>x</td>
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<tr>
<td>% VC completed</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>33%</td>
<td>66%</td>
<td>77%</td>
</tr>
</tbody>
</table>

### 3. Carrots

Carrots were not produced commercially in Kosovo, and restaurants - the main consumers – relied on imports. Rural households grew the crop in their gardens by hand for their own consumption - mainly targeting the autumn pickling season. Little was known about the commercial potential of cultivating carrots, the use of modern varieties, technology and appropriate machinery.

Before the project started to intervene seeding was done mainly by hand, or modified simple tools such as a tin can with holes.

The proposed carrot value chain was to have three main elements:

- The availability and use of a range of improved varieties;
• The availability and use of modern technology and machinery – especially for weed control – in order to allow the profitable cultivation of larger areas; and
• Improved marketing.

Of particular interest is that the promotion of the crop was initially concentrated on a limited geographical area – Lutogljava, Peja – and, after frustration with the last remaining client there, the Project moved its attention to another region around Rahovec where the farmers had no experience with commercial carrots – but were users of hybrid allium seed. After just one year on a pilot scale the technical and marketing results were encouraging enough for the client to decide to expand his operations. Meanwhile, back in Lutogljava, a successful crop – along with the positive use of a washing unit – has also convinced the old client to implement more rigorously the new techniques introduced by the Project and to contemplate a further expansion in 2006.

New varieties and successional sowing

The first step to introduce commercial cultivation was to replace the gardening cultivars with modern F1 hybrids. Professional varieties such as ‘Amsterdam’ and ‘Nantes’ – that were suitable for successional sowing - were introduced. This opened the prospect that the local fresh market could be supplied continuously and the need for lengthy storage reduced. Two early, 3 summer and 2 late hybrid varieties were brought in along with four non-hybrid cultivars. The Dutch seed purchased exhibited high resistance and tolerance to insect pests (such as carrot fly) and were of improved quality in terms of uniformity shape, taste and colour.

Seed drilling

Accurate sowing in rows is important for good weed control – and, by overcoming a serious labour bottleneck – is essential for larger-scale cultivation. Small wheeled hand seeders (Earthway) were introduced to farmers that were cultivating up to 0.5 ha while a 7-line tractor-mounted seed drill (Sembdner) was introduced for larger areas. The usefulness of both implements was immediately visible to clients – recognising the advantages also of the more even seed depth that produced uniform germination and subsequent growth.

Fleece cover for early and late production

Fleece cover was introduced to promote earlier harvest through raising crop temperatures thus capturing higher prices. Adoption on these open field sites, however, was much less than with farmers who had enclosed sites. Damage by dogs occurred and fears of theft existed.

Production techniques

Sprinkler irrigation was introduced to avoid problems occurring with flood irrigation such as poor germination and encouragement of diseases such as root rot.

Pre-emergent herbicides were tested (and the best introduced) as well as selective herbicides for use during the growing period. A tractor-mounted brush weeder was used but proved inefficient on the small plots. Another failure was encountered with a weed burner. Many of the farmers simply weeded using a hand-held hoe – an operation that was made considerably easier due to the accurate row sowing.

Thinning was also introduced to both reduce the density of plants as well as to harvest ‘spring carrots’ for the early high-priced market.

Mechanical lifting was attempted with little success probably because raised beds were not used. The forthcoming importation of a mechanised bed-former will allow a further test of this equipment.
Carrot summary

Initial situation (2001)
Carrots were not produced commercially in Kosovo - and restaurants, the main consumers, used imported carrots. Rural households grew the crop in their gardens by hand for their own consumption - mainly targeting the autumn pickling season. Little was known about the commercial potential of cultivating carrots, the use of modern varieties, technology and appropriate machinery.

Objectives of value chain
The proposed value chain was to have three main elements:
- The availability and use of a range of improved varieties;
- The use of modern technology and machinery – especially for weed control – in order to allow the profitable cultivation of larger areas; and
- Improved marketing.

Evolution of the Programme

<table>
<thead>
<tr>
<th>Year</th>
<th>Nb. Clients involved</th>
<th>Hectares covered</th>
<th>Av yield t/ha</th>
<th>Prod tonnes</th>
<th>% value chain completed</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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<td>3</td>
<td>12</td>
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</tr>
<tr>
<td>2004</td>
<td>6</td>
<td>3</td>
<td>15</td>
<td>50</td>
<td>7%</td>
</tr>
<tr>
<td>2005</td>
<td>6</td>
<td>4</td>
<td>25</td>
<td>100</td>
<td>33%</td>
</tr>
<tr>
<td>2006 expected</td>
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<td>10</td>
<td>30</td>
<td>300</td>
<td>80%</td>
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Development of the value chain

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</tr>
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<td>Access to market</td>
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<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

% VC completed 0% 0% 0% 7% 33% 80%

Post-harvest
Aspirations of expanding production have concentrated minds on the bottleneck of the washing of carrots – the old methods of using the local stream or car-washing equipment being considered as time-consuming and producing a product insufficiently clean for the market. The Project co-financed the import of a second-hand carrot washer in Lutagllava, the use of which has facilitated marketing, reduced labour use and encouraged thoughts of expansion.
Observations

The improved production techniques introduced – at least those that were successful – have allowed the development of a standardised and reliable system of root crop production and, along with the ease of marketing and the prices received, are well on the way to give clients the confidence that carrots could become a major crop for them. This, however, will depend on the successful completion of the production package with the testing of new equipment (especially the bed-former) due to be delivered in time for the 2006 season. If so, the foundation will have been established for a rapid scaling up of this enterprise and the possibility of capturing the local market.

It is calculated from market volume data that 50% of the local market would be captured if production were to expand to just 190 ha – a feasible proposition within four years. At this point the combined income from carrot production (value of jobs created and net income) would amount to €949,810 every year. Once all the ancillary services are included – advisory service providers, machinery hire, input suppliers and traders – the total number of jobs created would amount to 78 while the net income added to the national economy each year would be €1,150,944. These jobs and this income, moreover, would benefit mostly the rural areas.

4. Onions

Onion has a long tradition in Kosovo – both regarding production and consumption. It was treated largely as an industrial crop with large state-owned plantations cultivating with machinery on irrigated land. A large proportion of the crop was processed and the export to the rest of the Balkans of both the fresh and processed product constituted a major source of income and employment.

Small private farmers also cultivated onion in rotation with garlic on un-irrigated land - the traditional production region lying in a triangle between the municipalities of Suhareka, Prizren and Rahovec. Spring hand-planting of sets was carried out using yellow flat Dutch varieties imported from neighbouring countries. Cultivation was carried out by hand on raised beds – with areas per family rarely exceeding 10 aries. 20% of the crop would be thinned for sale as green onions.

By the end of the war the State-run production had collapsed. The quality of sets available for individual producers decreased rapidly and the sets were extremely expensive. The challenge for the Project, therefore, was to help transform the private household-scale cultivation of onions into a commercial enterprise for family farms that could recapture the local market.

New set types and seed hybrids

The objectives related to planting material were (i) to ensure the availability of good quality onion sets, (ii) to introduce varieties of sets that could be planted in the autumn thus allowing harvest for the early high-priced market in July, (iii) to introduce the use of F1 hybrid seed for autumn planting as a cheaper alternative to sets, (iv) to widen the choice of varieties available thus offering a range of required characteristics – such as long storage and higher yields. Five new varieties of sets were introduced along with 14 F1 seed varieties.

40 Set – a small onion bulb used for planting
Onion summary

Initial situation (2001)
The traditional region of onion production lay in triangle between the municipalities of Suhareka, Prizren and Rahovec. Spring planting was carried out with sets of the local flat type and imported yellow Dutch varieties from neighbouring countries. Cultivation was done by hand on raised beds – with areas per family rarely exceeding 10 ares. 20% of the crop would be thinned for sale as green onions. The cooperatives that had previously made machinery available (such as set planters) were no longer functioning. Insufficient onions were produced to meet market demand.

Value chain (VC) aimed for
The value chain aims to target three main elements:

- Improved family incomes from onions through higher margins and greater scale;
- Promotion of a sustainable machinery hire service;
- Recapture of the local fresh and processed market.

Evolution of the Programme

<table>
<thead>
<tr>
<th>Year</th>
<th>Nb. Clients involved</th>
<th>Hectares covered</th>
<th>Av yield t/ha</th>
<th>Prod tonnes</th>
<th>% value chain completed</th>
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<tbody>
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Evolution of the value chain

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<tr>
<td>% VC completed</td>
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<td>0%</td>
<td>0%</td>
<td>20%</td>
<td>47%</td>
<td>73%</td>
</tr>
</tbody>
</table>

Improving production techniques

Sprinkler irrigation has the same benefits for onions (as for carrots) – but can be crucial for spring-planted sets in order to increase the final size of the bulbs.

Mechanical weed control – similar to those described for carrots - and improved selective herbicides were introduced. The Project also introduced multifunctional hand wheel tools (Push hoes) that, along with several attachments, could weed, cultivate and prepare
lines for set planting. It has proved very popular for the onion set growers that have small-to-medium sized plots.

*Mechanisation* – The project has introduced a set planter and lifter in order (i) to reduce labour input, (ii) to increase areas under production and, hopefully, (iii) to facilitate group work. The machines are still being tested.

*Thinning* and the associated harvest of ‘spring onions’ have been facilitated by the use of set planters - particularly in the case of seed onions. The niche market for spring onions is growing every season and becoming an important supplementary income early in the season.

**Post-harvest and marketing**

Simple storage was introduced with one client in 2005 confirming his idea that such a practice will both provide an additional source of income as well as to reduce the hectic pressure to sell all produce at harvest. He intends to expand his storage capability in 2006 while neighbours have shown an interest in his experience.

The usefulness of the introduction of nets and labels to facilitate marketing has proved inconclusive.

**Observation**

The Project achieved two major objectives. Firstly, it has established the planting of sets in the autumn/winter as the standard practice – that now represents 75% of production. Secondly, its introduction of the set variety ‘Stuttgarter riesen’ has led to the latter becoming the predominant variety in the country and, in the process, replacing the Spring-planted ‘Holland White’ that produced small to medium sized bulbs with a medium yield and was unsuitable for un-irrigated sites.

The results of earlier trials with ‘seed onions’ have been lost - but trials in late 2004 (for the 2005 crop) have caused considerable interest amongst the new clients.

**5. Garlic**

Garlic has been typically grown in Kosovo for domestic family needs rather than as a commercial crop – with the market being supplied mainly from Vojvodina and Macedonia. Strings of garlic, however, have been marketed by farmers of Rahovec - mostly in the autumn for pickling and processing of peppers, tomatoes, cabbage, gherkins, onions and carrots. Demand is low during the rest of the year. Self-selected low quality seed cloves of the local variety produced small-sized bulbs and yields of around only 4 t/ha.

The value chain aims to principally target the following:

- Improved family incomes from garlic through higher margins and greater scale of operation based on the market preference for autumn planted garlic;
- Local virus-free multiplication of improved varieties;
- The capture of the local market by production of improved varieties and storage.

*Introduction of new cultivar*

Ten tonnes of cloves of the French variety Thermidrome were provided to 12 farmers in different locations for planting in 2002 with a view to making available an alternative to the local variety.
**Garlic summary**

***Initial situation (2001)***
Garlic has been typically grown in Kosovo for domestic family needs rather than as a commercial crop. Strings of garlic, however, were marketed by farmers of Rahanvec region. Marketing was mostly carried out in the autumn with demand being low during the rest of the year. Low quality seed (selected by farmers themselves) resulted in a low yield (4 t/ha).

***Objectives of chain:***
The value chain aims to principally target the following:
- Improved family incomes from garlic through higher margins and greater scale of operation through market preference of autumn planted garlic;
- Local virus-free multiplication of improved varieties;
- The capture of the local market by production of improved varieties and storage.

**Evolution of the Programme**

<table>
<thead>
<tr>
<th>Year</th>
<th>Nb. Clients involved</th>
<th>Hectares covered</th>
<th>Av yield t/ha</th>
<th>Prod tonnes</th>
<th>% value chain completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
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<td>25</td>
<td>0%</td>
</tr>
<tr>
<td>2003</td>
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<td>4.8</td>
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<td>0%</td>
</tr>
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<td>7</td>
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<tr>
<td>2005</td>
<td>5</td>
<td>2.8</td>
<td>10</td>
<td>28</td>
<td>30%</td>
</tr>
<tr>
<td>2006 expected</td>
<td>5</td>
<td>4.0</td>
<td>12</td>
<td>48</td>
<td>60%</td>
</tr>
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</table>

**Evolution of the value chain**

<table>
<thead>
<tr>
<th>Element</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
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<tr>
<td>Improved clove varieties</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>x</td>
</tr>
<tr>
<td>Access to reliable cloves</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Autumn &amp; spring sowing</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>x</td>
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<td>Mechanical lifting</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
</tr>
<tr>
<td>Access to equipment</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Access to, and use of, labelled packaging</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Storage</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
</tr>
<tr>
<td>Access to market</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>% VC completed</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>30%</td>
<td>60%</td>
</tr>
</tbody>
</table>

**Virus-free clove multiplication**
A start was made with the multiplication of virus-free garlic in 2003 in collaboration with the farmers’ association Agroserra at an altitude of 1,000 m near Mitrovica. Further multiplication of two varieties was undertaken near Istog in 2005 – also at a high altitude and with a new client.

**Packaging and labelling**
Improved packaging and labelling was introduced - 10 kg carton box, 5 kg net and small ‘sliver’ for 5 garlic bulbs.

**Observations**
The promotion of garlic has proved to be one of the most expensive investments made by the Project – largely due to the need to introduce new and expensive planting material. The strategy initially was to spread the production to as many localities as
possible on a big enough scale to impact significantly on the market. This strategy didn’t show the expected results for a range of reasons – (i) a large proportion of the farmers proved to be more attracted to the financial benefit of receiving free and expensive planting material than in really developing their business, (ii) most also did not possess any specific experience of the crop, and (iii) the market price proved unstable with cheap imports from China occurring in 2003.

The promotion of the crop was re-started in 2004/2005 with the Project concentrating its efforts on a few commercial growers in Rahovec. Collaboration with these cultivators is now beginning to show the potential of the crop.

6. White beans

White bean is one of the most popular vegetables for cooking in Kosovo with the indeterminant variety Molliq grown around Decan being particularly preferred due to its high quality and is sold at a considerable premium. Traditionally, the white bean was produced as an intercrop with maize – a method that resulted in very low yields (1.5 t/ha). Total local production was also low thus allowing space in the Kosovo market for imports.

A small percentage of the cultivation was carried out as a ‘single crop’ by more advanced farmers using canes or posts and wire for supporting the vines. The Project decided to try to introduce improvements in this type of cropping around Decan. The value chain proposed aims at achieving higher returns through:

- Higher prices as a result of the use of improved post-harvest technology, packaging and marketing;
- Higher yields and lower costs through standardising on the autochthon variety and the introduction of single-crop and associated technologies

**Training systems**

Three methods of supporting the plants were tested – (i) single upright wooden sticks at various spacings, (ii) placing three sticks to form a tripod, and (iii) wooden or concrete posts and wire.

**Post-harvest**

Threshing was identified as a labour bottleneck and three different threshers were introduced late in 2005 and tried out by producers at the very end of the season to their apparent satisfaction.
Observations
Interventions so far – although apparently appreciated - have not stimulated the expansion of production that was aimed for. Likely reasons include the high investment cost of the support systems and the high labour requirement for training the vines. Further promotion of white beans is unlikely should the new availability of mechanical threshers not lead to a significant interest in expansion of the enterprise in 2006.

White bean summary

Initial situation (2001)
White bean is one of the most popular vegetables for cooking in Kosovar with the indeterminant variety (Molliq) grown around Decan being particularly preferred due to its high quality. Traditionally, the white bean was produced as an intercrop with maize – a method that resulted in very low yields (1.5 t/ha). Local production, however, was very low thus allowing space in the Kosovo market for imports.

Objectives of value chain:
The value chain aims at achieving higher returns through:
- Higher prices as a result of the use of improved post-harvest technology, packaging and marketing;
- Higher yields and lower costs through standardising on the autochthon variety and the introduction of single-crop and associated technologies.

Evolution of the Programme

<table>
<thead>
<tr>
<th>Year</th>
<th>Nb. Clients involved</th>
<th>Hectares covered</th>
<th>Av yield t/ha</th>
<th>Prod tonnes</th>
<th>% value chain completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>7</td>
<td>2.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>9</td>
<td>2.50</td>
<td>8</td>
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<tr>
<td>2004</td>
<td>11</td>
<td>2.10</td>
<td>8</td>
<td>17</td>
<td>10%</td>
</tr>
<tr>
<td>2005</td>
<td>8</td>
<td>2.45</td>
<td>8</td>
<td>20</td>
<td>40%</td>
</tr>
<tr>
<td>2006 expected</td>
<td>10</td>
<td>3.50</td>
<td>8</td>
<td>28</td>
<td>60%</td>
</tr>
</tbody>
</table>

Evolution of the value chain

<table>
<thead>
<tr>
<th>Element</th>
<th>2002</th>
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<th>2004</th>
<th>2005</th>
<th>2006 est</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed selection</td>
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<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Access to reliable seed</td>
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<td>o</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Mono cropping methods</td>
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<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Wire training system</td>
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<td>o</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Effective mechanical weed control</td>
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<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Access to reliable agrochemicals</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
</tr>
<tr>
<td>Access to equipment (threshing, calibrating)</td>
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<td>o</td>
<td>o</td>
<td>t</td>
<td>x</td>
</tr>
<tr>
<td>Access to, and use of, labelled packaging</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
</tr>
<tr>
<td>Access to market</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>% VC completed</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
<td>40%</td>
<td>60%</td>
</tr>
</tbody>
</table>
Annex C

Soft Fruit

Introduction

Initial situation

Kosovo was noted for its production of soft fruits in the ‘80s with more than 50 ha of different species concentrated in the Dukagjini Valley and the Anamorava region. The production was largely carried out by state-owned agro-combinats and sold processed – mainly frozen – with up to 3,600 tonnes being exported to Germany. Four species were cultivated on a commercial scale but normally on very poor quality soils.

The main crop was strawberry, cultivated on around 50ha - 90% of which on state-owned land – and with an estimated yield of 10t/ha. 70% of the production was processed into jam and juice and marketed in Germany, USA and Arabian countries. The fresh produce was marketed through the state-owned retail network throughout the country. Raspberries covered some 12ha on state-owned land between 1978 & 1984 with an estimated production of 6t/ha. Bacterial spur blight and Brown rot were common diseases. 80% of production was processed with frozen fruit being marketed in Germany. Blackberries covered around 40 ha of state-owned land between 1981 & 1995 with an estimated yield 3t/ha. Brown rot was problematic. Production was largely processed. Only 18 ha of currents were established – but with poor results.

This once robust capacity to grow soft fruit in Kosovo was vastly reduced in the late 90s due to the collapse of the large state-owned companies – and production was practically inexistent by 2001.

Project intervention

SPHP-K started involving itself in the reintroduction of soft fruit in the South West in April 2001 with small-scale producers in the belief that the enterprise could develop into an important engine for income-generation for the rural population.

Since April 2001, within these framework conditions, SPHP-K has implemented several Participatory Technological Development agreements to reintroduce soft fruit production in Kosovo enabling these newly established small-scale growers to compete with imported products and improve their linkage to the market. This project intervention has been primarily based on the hypothesis that soft fruit production in the region could become an income generating activity41.

The strategy involved promoting the establishment of a value chain (following the approaches and principles described in the main report) based on modern varieties and techniques with production encouraged in the small-scale sector and marketing aimed at the import substitution of fresh and imported produce.

41CAPEX soft fruits 2004;
Strawberry

Value-chain establishment

Four widows, who had previously cultivated strawberries with their husbands near Gjakova, were supported in reintroducing commercial strawberry cultivation in 2001 on 0.9 ha. The yields that they obtained the following year encouraged 11 families to copy them. By 2004, 36 clients had been supported and had produced 146 tonnes during 2005 – representing 15% of the total market demand. (Total local production is estimated to account for 27% of the local market – up from zero in 2001). A further 32 clients started planting in 2005. The various introductions that were behind this development are described below – apart from those dealing with processing, packaging and marketing that are dealt with in their respective annexes.

New varieties: Six new varieties were introduced from UK in 2001 – selected to ensure a longer presence in the market. The varieties were tested over two years for yield, taste, shape, pest and disease tolerance, transport qualities, shelf-life and likely acceptance in the market. Results were presented in meetings and workshops to different actors (producers, input suppliers, institutions, banks). Three out of the six varieties were finally selected for production (Honeoye, Hapil and Pegasus). They averaged a yield of 17t/ha, were present in the fresh market over a ten-week period from May to the first week of June and competed well against imports.

Plastic mulch: Both simple and perforated plastic mulch was introduced to ease the serious problem of weed control and to reduce reliance on chemicals and their associated health risk. Plastic mulch is currently being used on 6 of the current 15 ha.

Drip irrigation: Drip irrigation systems have been introduced on just 1 ha and have led to a 30% increase in yield and a considerable reduction in water use. Importation of both material and installation expertise was required initially – but both are now available in-country. The recent sharp decrease in the price of plastic piping is likely to lead to a considerable

Soluble fertilizers: The availability of drip irrigation has allowed the introduction of water-soluble fertilisers – and has led to a further 30% increase in yield – but are only in use so far on 0.5 aries. Further expansion is expected to be no more than gradual bearing in mind the perceived high cost per kg and the care necessary for application.

Fleece cover: Imported fleece was introduced to protect the over-wintering of plants and has led to an advance in harvest of between 7 and 10 days – in the process attracting higher prices. 6 ha are currently covered by fleece – and the product is now available on
the local market. In a similar development, poly-tunnels have been tried out over 5 ares with one client and have led to a 15-day advance in harvesting date.

Packaging, labelling and jam production: are dealt with in their respective annexes.

Runner production

Strawberry plants have an optimal economic life of three years after which a new crop needs to be established using 1st or 2nd generation runners from mother plants. The sophisticated techniques for mother plant production are not yet practiced anywhere in the Balkans and their import is considered a necessity in the medium term. The Project started by importing mother plants from UK, organising their multiplication by contracted nursery owners and supplying the runners produced to new clients. One mother plant will produce 50 runners over a 12-month period.

As from 2004 the Project has also encouraged the nurserymen to purchase and multiply additional mother plants in their own right. For a number of reasons it has been obliged to pre-finance these imports. In 2005 the nursery owners produced 150,000 1st generation and 100,000 2nd generation runners - sufficient for 5 ha. In the same year, the Project imported 15,000 mother plants for use in supplying new clients with runners while the nursery owners ordered a further 2,100 mother plants for their own benefit.

It is hoped that the nursery owners will organise and pre-finance their own import of mother plants in 2006 – by overcoming their lack of confidence in the market for runners and by being able to access credit – if necessary.

Scaling up

Strawberry was the first enterprise that was the object of the promotion of 'scaling-up' by the Project. Six families in Debelide, Viti municipality, located at 1300 m and 150 km from the site of the initial strawberry cultivation around Gjakova, were selected in late 2003 for assistance in establishing a total of 1 ha. The quality and volume of their production in 2005 and the ease with which they marketed their produce was broadcast on Kosovo television and created consideration interest amongst potential clients. It also provided the project with valuable lessons that were influential in the definition and clarification of the 'scaling-up' strategy.

The first methodical scaling-up thus commenced in 2005 with the support of additional funding by SDC – and involved 32 clients clustered in 5 sites covering four new municipalities in the south. The details of the support given to new clients, the economic returns and the subsequent expansion expected to take place without further direct project intervention are covered in Chapter 7 and in Annex R. Plans for the second, and final, year of assisted scaling-up in 2006 are expected to involve a further 12 sites and 60 new clients.

Identified problems

Financing expansion

The high return shown on strawberry production led the Project to think that credit would not be required for the progressive expansion of cultivation by a family once they had been assisted in the first year by the Project. This proved not to be the case. It is now understood that financial demands on rural families in this post-conflict situation are so large that clients have been unable – or unwilling – to allocate net income to the expansion of an enterprise that they readily admit is very attractive. The Project is currently in discussions with micro-finance institutions to encourage them to establish appropriate credit products.
Importation of mother plants

The need to organise and finance the importation of mother plants sufficient to replant (after multiplication) at least 33% of the existing cultivated area is dependent on the business acumen and the confidence in the demand for runner of the nursery owners that have been trained – or the introduction of more business-oriented individuals to the activity. The availability of an appropriate credit product is required. This lack of confidence in the market is, to a large extent, related to the unawareness of many producers that optimal benefit will be obtained by up-rooting their plants after three years of production – even though their productive life is considerably longer.

Plant Breeders’ Rights

The payment of Plant Breeders’ Rights on top of the cost of the regular importation of mother plants is probably one burden too much for an industry in the process of re-establishing itself. The Project has managed to obtain a waiver for its clients for 5 years in respect of the one key variety that is currently under PBR (Pegasus) – but the regulation may well limit the introduction of other potentially attractive cultivars.

Potential impact

It is calculated (in chapter 7) that 90% of the local market would be captured if production were to expand to 48 ha. At this point the combined income from strawberry production (value of jobs created and net income) would amount to €484,150 every year – with jam production adding a further €188,772. Once all the ancillary services are included – advisory service providers, nurseries, machinery hire, input suppliers and traders – the total number of jobs created would amount to 35 while the net income added to the national economy would be €784,272. These jobs and this income, moreover, would benefit mostly the rural areas.
Swiss Project for Horticultural Promotion-Kosovo

Strawberry summary

Initial situation (2001)
In the mid-1980s around 50 ha of strawberries were being cultivated both on private and state land with average yields of 6.2 t/ha and with marketing done through centralised channels. About 50% of production was dedicated for fresh market mainly in Kosovo the remainder was processed (mainly for juice) and marketed centrally to the rest of Yugoslavia as well to USA and Germany. Plastic mulch and straw were used for weed control and sprinklers for irrigation. By 2001, and as a result of system collapse both before and after the war, no commercial cultivation remained and processing factories were closed.

Value chain aimed for
Strawberry cultivation and processing was identified by the Project as an attractive and profitable income- and employment-generating enterprise for family farms.

The idea was to develop and introduce to clients a value chain that would best utilise the resources of the rural household. It would involve the use of improved varieties with a wide spread of harvesting dates and that could compete successfully on the market, utilise simple but effective technology, have a range of marketing chains utilising attractive packaging and utilise an appropriate credit product to finance expansion. Key to the sustainability of the value chain was the existence of successful strawberry runner producers who were capable of organising the import of planting material.

Evolution of the Programme

<table>
<thead>
<tr>
<th>Year</th>
<th>No. Clients involved</th>
<th>Hectares covered</th>
<th>No. Of varieties</th>
<th>Production tonnes</th>
<th>Local prod % of market</th>
<th>% value chain completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>4</td>
<td>0.90</td>
<td>6</td>
<td>4</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>2002</td>
<td>15</td>
<td>3.51</td>
<td>6</td>
<td>10</td>
<td>3%</td>
<td>8%</td>
</tr>
<tr>
<td>2003</td>
<td>23</td>
<td>7.66</td>
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<td>42</td>
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<td>33%</td>
</tr>
<tr>
<td>2004</td>
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<td>9.28</td>
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<td>50%</td>
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<tr>
<td>2005</td>
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<td>15.98</td>
<td>3</td>
<td>146</td>
<td>27%</td>
<td>67%</td>
</tr>
<tr>
<td>2006 (exp)</td>
<td>148</td>
<td>32</td>
<td>6</td>
<td>272</td>
<td>50%</td>
<td>92%</td>
</tr>
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Evolution of the value chain

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<thead>
<tr>
<th>Element</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006 est.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved varieties - access to, and use of</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Runner production</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Import of mother plants by nursery owners</td>
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<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
</tr>
<tr>
<td>Plastic mulch - access to, and use of</td>
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<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Fleece cover - access to, and use of</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Drip irrigation – access to, and use of</td>
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<td>t</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
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<td>Soluble fertilizers - access to, and use of</td>
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<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Early fruit production under low poly tunnels</td>
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<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
</tr>
<tr>
<td>Packaging &amp; labelling – access to, and use of</td>
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<td>o</td>
<td>x</td>
<td>x</td>
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<td>Good market access</td>
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<td>t</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Fruit processing (homemade jams)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Credit product - access to, and use of</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
</tr>
</tbody>
</table>

% VC completed 0% 8% 33% 50% 67% 92%

42 Represents the market penetration of both project clients and other producers. Project clients themselves captured an estimated 17% of the Kosovo market in 2005

43 Of which 32 had planted in 2005 but had not yet harvested their first crop
Raspberries

The objective and approach of re-introducing raspberries was similar to that of strawberries. Raspberries have the comparative advantage of an economic life spanning 15 years – but several disadvantages – higher establishment costs (particularly related to the need for support structures), greater disease problems and a lack of consumer acceptance of the fresh fruit.

Six varieties were introduced and tested with seven clients in four locations in 2001. By 2005 they were producing 20 tonnes from 1.45 ha. Considerable difficulty was experienced with the marketing of the fresh fruit and an increasing interest developed in jam processing – 0.6 tonnes being produced and sold in 2005.

Tentative scaling-up commenced in 2005 and involved two Serb families near Gjilan. Steps required to complete the value chain include additional varieties resistant to diseases; production of young plants that fulfil certification criteria; upgraded plant support systems to improve plant protection and fruit quality; strengthening of advisory service provision and publishing of technical information.

Blackberries

The objective and approach of re-introducing blackberries was similar to that of strawberries. Raspberries have the comparative advantage compared to strawberries of an economic life spanning 15 years – but the disadvantages of higher establishment costs (particularly related to the need for support structures) and a lack of consumer acceptance of the fresh fruit.

Three heavy yielding varieties were introduced in two locations in 2001 and their assessment was carried out in 2005. The two clients produced 11.0 tonnes in 2005 on 0.75 ha and processed 0.4 t of jam. Tentative scaling-up commenced in 2005 with 5 clients in 1 new municipality. Planting material production has been initiated.

Timing of production

Different production techniques and selection of varieties has led to clients being able to supply the market with fresh fruit on a continuous basis for 7 months – ie from April to October – as shown in the following table. This compares with just xx months obtained during the ‘90s. The processing of jam extends that season further.

<table>
<thead>
<tr>
<th></th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strawberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early raspberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Late raspberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blackberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Annex D

Top fruit

Introduction
Kosovo has been recognized as a productive tree fruit growing area for centuries – benefiting from favourable agro-climatic conditions as well as traditional varieties that exhibited good pest and disease resistance. The basis of a modern commercial industry was established in 1957 with the introduction of new varieties and cultivation techniques and, by 1984, over 12,000 ha of were in production – of which 83.8% were privately owned. Apple was the dominant species, followed by plums, pears, cherries and walnuts. The dominant rootstocks were generative while those vegetative rootstocks that were used tended to be the most vigorous (M4, M7, M111) allowing only around 500 trees per ha. Marketing channels were centralised with fresh and processed fruit being sold throughout the country. Peja Institute was responsible for producing planting material.

By 2001, as a result of system collapse both before and during the war commercial orchards of all species (ie of apple, plum, cherries, and hazelnut) had been reduced to less than 60 ha and all the processing factories had been either destroyed or closed. Peja institute had effectively stopped working - its planting material resources having been lost so that, in 2001, no vegetative rootstock was produced in the country for any of the top fruit species. The market was dominated by imports of fruit and of poor quality planting material from neighbouring countries.

Project strategy
Given the history of successful fruit production in Kosovo, it was assumed that a re-established industry had a good chance to recapture the local market (and, possibly, exploit export markets) for both fruit and planting material. Such an industry, however, would need to be based on the modern techniques and varieties likely to be demanded in the medium and longer term by the market. It was recognised that, due to the number of years to first commercial harvest, considerable investment in demonstration orchards and nursery establishment was going to be necessary before any definitive reaction of the market was obtained.

The value chain was to be promoted by introducing new varieties; improving farmers’ cultural practices through demonstration orchards, study tours, workshops, events and training; by making relevant information available; by making available high quality plants through importation initially but then by supporting the establishment of nurseries; by encouraging service providers and local consultants; by improving post-harvest practices; by further exploration of market opportunities and developing marketing techniques and channels, by encouraging the availability of appropriate inputs - and by facilitating communication, understanding and collaboration between the various actors.

Promotion of the value chain

Testing and demonstration of varieties and techniques

Varieties
Fourteen orchards – covering 6.9ha - have been established since 2002 throughout the country to test and demonstrate a range of varieties and cultivation techniques. In

44 Discussions with Peja Institute and MAFRD
45 Istog, Klina, Decan, Gjakova, Kamenica, Shtrpce, Viti and Gjilan municipalities
addition, two variety collection orchards have been established in Istog and Kamenica municipalities containing between them 29 varieties of apple, 13 of pear, 12 of plum and 10 of cherry. Rootstocks used comprise 5 types for apple (M27, M9, M26, MM106, M111 and M25), 1 type for pear (Pyrus Communis), 1 type for plum (St. Julien A) and 1 for cherry (Colt).

All the planting material was imported, virus-free and certified. The choice of varieties was based on an assessment of future market demand and to provide a range of product attributes (different periods of harvest, storage qualities, taste, table/cooking). Several apple varieties, for example, were chosen for their similar appearance and taste to the currently dominant Ida Red – but without its disadvantages.

A full assessment of the morphological characteristics of the introduced varieties was carried out in 2005 since some may not exhibit the same characteristics in Kosovo as in their country of origin. Yield measurements taken in the same year provide a guide to the yields likely to be obtained over the whole life of the orchards.

### Demonstration orchards established

<table>
<thead>
<tr>
<th>Year</th>
<th>Species</th>
<th>Nb</th>
<th>Introduced technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>apple</td>
<td>1</td>
<td>12 apple varieties; irrigation &amp; fertigation system; organic mulch; support system; modern pruning; M27, M9, M26 rootstocks</td>
</tr>
<tr>
<td>2003</td>
<td>apple</td>
<td>4</td>
<td>17 apple varieties; support system; modern pruning; M27, M9, M26 rootstocks</td>
</tr>
<tr>
<td>2003</td>
<td>pear</td>
<td>1</td>
<td>7 European pear varieties and 6 Asian pear varieties; Pyrus communis rootstock</td>
</tr>
<tr>
<td>2003</td>
<td>plum</td>
<td>2</td>
<td>12 plum varieties, irrigation system, St. Julian A rootstock</td>
</tr>
<tr>
<td>2003</td>
<td>cherry</td>
<td>1</td>
<td>10 cherry varieties; Colt vegetative rootstock</td>
</tr>
<tr>
<td>2003</td>
<td>collection</td>
<td>2</td>
<td>64 varieties of apple, pear, plum and cherry trees</td>
</tr>
<tr>
<td>2004</td>
<td>apple</td>
<td>4</td>
<td>More vigorous rootstock MM111; autumn planting; high altitude for imported varieties</td>
</tr>
<tr>
<td>2005</td>
<td>apple</td>
<td>1</td>
<td>More vigorous rootstock M106</td>
</tr>
</tbody>
</table>

### Techniques

Various modern techniques have been tested in the demonstration orchards. Most orchards have been planted as semi-intensive (1,000 trees/ha) while the apple orchard at Carrabreg is the most intensive in the country at 2,300 trees/ha (3.5 x 1.2m) and is showing positive results. Other techniques introduced that were necessary for modern intensive orchards include modern pruning, pole and wire supports, drip irrigation, organic weed control (wooden chips), improved plant protection through service providers and improved harvesting techniques. The introduction of integrated production is planned for 2006.

### Promotion of quality nurseries

The establishment of quality nurseries commenced in 2002 with two farmers in Istog municipality and a group of nursery owners in Kamenica municipality. Imported planting
material of scion and vegetative rootstock was provided to the new clients along with advice and other materials on a return component basis. This was the first time vegetative rootstocks were to be produced in the private sector in Kosovo while such production in the public sector had ceased. These nurseries are supported by two mother orchards established in 2003 with 165 trees of 64 improved varieties – ie 29 varieties of apples, 12 of plums, 13 of pears and 10 of cherries.

The production of improved trees from these nurseries in 2005 and the expected production in 2006 are presented in the table below.

<table>
<thead>
<tr>
<th></th>
<th>Autumn 2005</th>
<th>Autumn 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nb</td>
<td></td>
</tr>
<tr>
<td>Apple</td>
<td>8,500</td>
<td>100,000</td>
</tr>
<tr>
<td>Pear</td>
<td>1,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Plum</td>
<td>500</td>
<td>20,000</td>
</tr>
<tr>
<td>Cherry</td>
<td>500</td>
<td>3,500</td>
</tr>
<tr>
<td>total</td>
<td>10,500</td>
<td>153,500</td>
</tr>
</tbody>
</table>

Steps needed to complete the value chain

The following steps need to be further followed for the completion of the value chain:

- Development by the commercial banks of an appropriate credit product for the establishment of orchards;
- Testing intercropping in the initial years of orchard establishment to facilitate credit repayment;
- Promotion of commercial plum, cherry and pear orchards;
- Development of container plants for all-year-round domestic sales;
- Storage;
- Improved marketing of fruits and young trees (labelling and promotion of specific varieties for the local market) and export market study;
- Continuation of awareness-raising amongst different actors in the country in respect of the potential for the local production of planting material and fruit of improved varieties as well as the steps required to strengthen the enabling environment to allow the industry to flourish. (Activities undertaken in 2005 in this regard covered an open day, an apple day, seminars, variety tasting, visits to nurseries and demonstration orchards, several exposures on national television and involved nursery owners, producers, service providers, traders, banks, central and municipal government and donor projects.

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46 Vegetative rootstocks (as opposed to generative or seed grown rootstock) are produced vegetatively from suckers and, once grafted with scion material, produce trees of a specified vigour and size (normally of low vigour and reduced size) that lead to a reduced number of years to first commercial fruiting, easier management and higher yields/ha. Trees on such rootstock, however, require a large investment in support systems.

47 Project-supported nurseries are the only ones producing improved varieties on vegetative rootstock in the country.
Scaling up

Methodical scaling up commenced in 2005 utilising additional funding provided for the purpose by SDC and following guidelines discussed, and agreed, with MAFRD – including the selection of sites within the Dukagjini and Anamorava regions. Just six ha were planted with apple in autumn 2005 (due to limitations in the availability of planting material) with the sites selected jointly with municipal agricultural staff – and involving 8 new clients. The Project designed the orchards, provided the planting material and funded service provision for cultural advice and hole-digging. Further detail of the approach is given in a paper written in July 2005 to support a request to SDC for additional funding – an extract of which is provided in Annex R.

Plans for 2006 – should sufficient funding be obtained including the availability of an appropriate commercial credit package – involve support to the establishment of a further 60 ha.

A further three nurseries are to be established in 2006 using planting material ordered in late 2005 – but following much stricter criteria in client selection. They would start selling trees in time for the autumn 2007 planting.

Potential impact

Crop costing, yield assessments and current market prices allow for a determination of the likely impact of apple production at the individual farm and national levels. Income and costs are conservatively taken over the first 15 years of the life of orchards – even though the latter will have an optimum economic life of 25 years. Inflation is not taken into account.

Over the first 15 years of the life of a one hectare orchard – a manageable size for a farm family – the latter could expect an average net income of over € 11,000 p.a. as well as paid employment equivalent to half a man-year. The value of the latter when added to the net income would provide the family with an income of almost € 13,000 p.a. Annual income in years 15-25 is likely to be still higher since the establishment costs would not be included and yields would only start to decline gradually after the 20th year.

Should the new apple industry expand to cover 500 ha (foreseeable within five years) – thus meeting 75% of the local market - the total additional income to the actors concerned (orchardists, service providers, input suppliers and traders) would amount to € 7.6M per year over the first 15 years. Additional detail is provided in Chapter 7.
Lessons learnt

The difficulties currently encountered during implementation are outlined below:

Nursery production:
- The advantages of vegetative rootstocks are insufficiently known amongst the farming population leading to stiff competition for nurserymen from the cheaper trees based on generative rootstock.
- Nursery owners are unsure of the market for improved trees – a handicap when investment in propagation has to be made over a year before sale.
- The number of plum, cherry and pear vegetative rootstock so far produced is not satisfactory. The attempt to produce vegetative rootstock of pear and plum failed because of lack of knowledge of the Project.
- Only one recommended plum variety is currently available with nurserymen thus limiting demand from farmers – additional varieties will be available in 2006.

Crop production:
- Farmers have been disinclined to follow advice on cultural practices – including plant protection and tree management – leading to produce of insufficient quality.
- Very serious diseases are recorded in apple, pear and quince as well as virus problems in plums as elsewhere in neighbouring countries.
- Farmers are unfamiliar with the biology of trees and with pests and diseases.
- Storage is primitive.
- Cherry and pear production has not been taken up enthusiastically by farmers – for pears partially due to the perception of disease problems.
- Only two commercial plum orchards have been established even though the production is very profitable and produce can be marketed fresh, dried and distilled.

Enabling environment:
- Procedures for the certifying and labelling of young trees by MAFRD are not yet operational nor are sufficient phyto-sanitary controls made on the borders or within the country. Import and sale of trees is largely uncontrolled.
- No appropriate commercial credit product available for orchard establishment.
Apple summary

Initial situation (2001)

Kosovo has been recognised as a productive tree fruit growing area for centuries – benefiting from good agro-climatic conditions as well as traditional varieties that have developed good pest and disease resistance. The basis of a modern commercial industry was established in 1957 with the introduction of new varieties and cultivation techniques and, by 1984, 12,589 ha of top fruits were in production – of which 83.8% privately owned. Apple was the dominant species, followed by plums, pears, cherries and walnuts. The highest average yield per apple tree was estimated at 24kg. The dominant rootstocks, however, were generative while those vegetative rootstocks used tended to be the most vigorous allowing only around 500 trees per ha. Marketing channels have been centralised but fresh, as well as processed, fruits have been sold through out the country. By 2001, as a result of system collapse both before and after the war, no more than 60 ha of commercial orchards of all species remained (apple, plum, cherries, and hazelnut) and none of the processing factories were operating. Nursery production was centralised, guided from the Ministry and University. Small private nurseries were producing only generative rootstock at Koretin, Ferizaj and Shtime.

Value chain aimed for:

The value chain aims at establishing the domination of the local market by:

- The presence of local nurseries making available a range of varieties both attractive to the market and profitable to grow,
- Semi-intensive and intensive cultivation techniques allowing for high margins from labour and land use, and
- An enabling environment including access to appropriate credit and technical and marketing advice.

Evolution of the Programme

<table>
<thead>
<tr>
<th>Year</th>
<th>No. Clients involved</th>
<th>Hectares covered</th>
<th>No. of varieties</th>
<th>% value chain completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2003</td>
<td>14</td>
<td>5.9</td>
<td>64</td>
<td>16%</td>
</tr>
<tr>
<td>2004</td>
<td>19</td>
<td>7.3</td>
<td>6</td>
<td>50%</td>
</tr>
<tr>
<td>2005</td>
<td>26</td>
<td>13.3</td>
<td>8</td>
<td>58%</td>
</tr>
<tr>
<td>2006 (exp)</td>
<td>88</td>
<td>73.3</td>
<td>6</td>
<td>83%</td>
</tr>
</tbody>
</table>

Evolution of the value chain

<table>
<thead>
<tr>
<th>Element</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006 est.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Established nurseries providing quality plants</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>x</td>
</tr>
<tr>
<td>Established scion hedge rows</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Local variety collection orchard</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
</tr>
<tr>
<td>Pole and wire support - access to, and use of</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Modern pruning</td>
<td>o</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Drip irrigation - access to, and use of</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Soluble fertilizer - access to, and use of</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Organic weed control</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
</tr>
<tr>
<td>Quality harvesting and packaging</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Effective storage to May for major varieties</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Recognised presence on the local market</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Access to local advisory service providers</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Credit product - access to, and use of</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
</tr>
<tr>
<td>% VC completed</td>
<td>0%</td>
<td>0%</td>
<td>16%</td>
<td>50%</td>
<td>58%</td>
<td>83%</td>
</tr>
</tbody>
</table>
Annex E

Ornamentals

Introduction

Bedding plants, ornamental trees and shrubs were mainly produced by former state-owned companies that maintained public parks, possessed flower shops and exchanged products with other Yugoslavian enterprises. Only one village – Koretin in Eastern Kosovo - had private ornamental producers (mainly of thuja and roses). The cultivation of bedding plants was traditionally a domestic affair undertaken by women who collected seeds for further planting and exchanged species with neighbours. One state-owned cooperative produced compost for mushroom production.

The commercial production and marketing of ornamentals in the private sector began shortly after the war in 1998/9. Small-scale production of bedding plants occurred using simple un-heated poly-houses but with the use of the producers’ own poor quality seed (Agroalba). Some imported seedlings (mainly Serbian) started to appear in the local market. No input supplier existed for the supply of seed, seedlings or other materials. The state-owned compost factory had been destroyed in the war resulting in no locally-produced substrate being available apart from some nurseries that produced a relatively poor quality product for their own use. A lot of well-packed compost was imported from neighbouring countries - and some of the local nurseries purchased the imported substrates which in fact increased the cost of seedling production.

Initial project approach

The identification and assessment of existing nurseries (for all types of plants) was part of SPHPK’s initial phase of activities and identified 3 commercial nurseries (South West and East of Kosovo) with different profiles (fruits, vines, ornamentals). In order to make the most efficient use of the nursery expertise that already existed, the project developed a network of nurseries embracing both regions. The idea was that the network would be used to make a range of nursery products available to farmers and also facilitate the training in nursery skills and sharing of experiences.

The approach initially adopted by the project concerning the nursery component was to support the establishment of private bedding plant nurseries, the creation of compost production units and the local production of ornamental plants.

Project intervention

Nurseries and bedding plants

The Project has consistently emphasised and supported the pivotal role of nurseries - with bedding plant production being the main technical focus. Nursery owners were assisted in the introduction of new species and improved planting material, introduced to new equipment, advised on production techniques and marketing strategy and assisted in developing marketing strategies and business plans. Some vegetable seedling producers also recognised the profitability of bedding plant seedling production and moved into the activity after having invested in coal fired heating systems.
Nurseries were both producing seedlings and growing on plants to point of sale. Seedling production of bedding plants increased from zero in 2001 to 100,000 in 2005, involved 20 species and captured an estimated 36% of the local market.

Advice and support has been given in the presentation of products. Initially bedding plants were sold in simple plastic bags, later this changed to standardised rigid pots with labels. Latest developments have included the introduction of hanging baskets and the promotion of landscaping – both having the advantage of differentiating the products from imports.

Suggestions to nurseries to specialise their production – by, for example, limiting the number of species and/or by concentrating on seedling production - have only recently shown signs of being accepted. This recent development has partly been driven by the import of high quality seedlings from Holland that increased substantially in 2005 (many being purchased by the nurseries themselves) and is starting to force an examination of which species are most economical to import and which to produce in-country. It is unlikely, for example, that local nurseries could compete in quality or price with imported Petunia. Vegetative propagation of plants such as Pelargonium, Fuchsia, and Impatiens, however, appears to offer comparative advantage when done locally. A factor affecting the comparative advantage of local seedling production would be whether the forthcoming trials of the seedling growth room – co-financed earlier with one client – were successful or not. A further study on comparative advantage is necessary.

The quantity marketed of locally-produced bedding plants has shown a considerable increase from a level of 10,000 in 2002 to 100,000 in 2005 – the latter having a total value of around €50,000. The quantity of 100,000 plants provided the equivalent of 208 days of employment within 3-4 months (3,120 at €15/day) and produces a net income in excess of this of €22,732 only for the out-growers and an equivalent amount for the nurseries.

Out-growers

The Project has been promoting the emergence of out-growers and on-growers who bring on seedlings to the point of sale – and the development of links between them and the nurseries – with the latter providing, not only the seedlings, but advice and, in certain cases, marketing services too. The Project decided late in 2005 to phase out its direct promotion of such out-growers and to concentrate more on encouraging nurseries (who are equipped with heated poly-houses) to develop by themselves their network of out-
growers and on-growers (equipped with un-heated poly-houses). The latter numbered 5 in 2005 – all women.

**Cut flowers and herbaceous shrubs and trees**

The experiences and contacts made by working through the nursery network have made it easier for the Project to promote the introduction of other ornamental sub-components. Support has been given in 2005 to the development of cut flower production while an order has been placed for the importation of planting material for a wide range of herbaceous shrubs and trees to augment the very limited range currently available to herbaceous nurseries in the country.
**Bedding plants summary**

**Initial situation (2001)**
Bedding plants, ornamental trees and shrubs were mainly produced by former state-owned companies that maintained public parks, possessed flower shops and exchanged products with other Yugoslavian enterprises. As a part of this organised marketing system in Kosova - “Hortikultura” Enterprise (Social Owned) possessed all the capacities in production and marketing.

The cultivation of bedding plants was traditionally a domestic affair undertaken by women who collected seeds for further planting and exchanged species with neighbours.

The commercial production and marketing of bedding plants began shortly after the war in 1999. Small-scale production of bedding plants occurred using simple un-heated poly-houses but with the producers’ own poor quality seed. Some imported seedlings (mainly Serbian) started to appear in the local market although no input supplier existed in Kosovo supplying seed, seedlings or other materials.

**Objectives of the value chain**
- The existence of robust nursery enterprises in the private sector;
- Good practice in the production and marketing of bedding plants in order to provide employment and generate income
- Existence of sustainable business services to facilitate the further growth and responsiveness of the industry.

**Evolution of the Programme**

<table>
<thead>
<tr>
<th>Year</th>
<th>Clients involved</th>
<th>Seedling production</th>
<th>Species</th>
<th>Market penetration (%)</th>
<th>% value chain completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>2002</td>
<td>2</td>
<td>10,000</td>
<td>5</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>2003</td>
<td>5</td>
<td>20,000</td>
<td>10</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>2004</td>
<td>13</td>
<td>50,000</td>
<td>15</td>
<td>18%</td>
<td>19%</td>
</tr>
<tr>
<td>2005</td>
<td>9</td>
<td>100,000</td>
<td>20</td>
<td>36%</td>
<td>44%</td>
</tr>
<tr>
<td>2006 expected</td>
<td>20</td>
<td>150,000</td>
<td>25</td>
<td>54%</td>
<td>69%</td>
</tr>
</tbody>
</table>

**Evolution of the value chain**

<table>
<thead>
<tr>
<th>Element</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006 est</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability and use of improved F1 varieties for bedding plants</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Access to reliable seedlings</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Propagation by cuttings for bedding plants</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Access to, and use of, growth room for AYR seedling product.</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Sowing, planting and transplanting in pots</td>
<td>o</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Access to reliable inputs and nursery sundries</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Access to, and use of, local compost</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Access to, and use of, shading</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Effective weed control by mulching</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Effective over-wintering of plants</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
</tr>
<tr>
<td>Access to, and use of, promotional material</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
</tr>
<tr>
<td>Exchange of products &amp; knowledge</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Provision of garden landscaping &amp; design services</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Access to reliable local service providers</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Existence of garden centres</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Access to market</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>x</td>
</tr>
</tbody>
</table>

% VC completed 0% 0% 7% 19% 44% 69%
Industrial and worm compost

The promotion of industrial compost production was initiated with three members of the Agroklina Association who were staff of a former composting and mushroom production unit of the state-owned Malishgan factory that was destroyed during the war. Support for the purchase of equipment, packaging and marketing was provided along with advice. Eventually a single member of the Association bought out the other members and operated the unit privately using the same name – Agroklina. Production reached 150 t in the 3rd production year in 2005 and captured an estimated 15% of the national market.

The production of worm compost offers many interesting advantages. It has a low investment cost, can be expanded in small increments, occupies little space, can be located close the house, leads to a high quality product that could readily find a market and can provide a relatively quick and regular income. In short it appears most suitable for rurally-based women who have access to as few as two cattle.

This activity was introduced successfully to one household in Gjakova in 2002 – but production stopped within 2 years as a result of factors unrelated to the component itself. It was at a time when the project assumed that, once one new enterprise was up and running successfully, it would be simply copied by admiring neighbours without further project investment. This was not to be the case. In 2005, however, an agricultural graduate who had been studying the subject of worm composting for several years on the internet took the opportunity to purchase the worms (that had been previously imported by the Project) and started medium scale production himself very professionally. The Project has seized this opportunity to establish an agreement with him that involves the joint promotion of the enterprise to potential clients with the person in question providing his advisory and quality control services on the understanding that the marketing of the new clients’ production will initially be channelled through him. The agreement stipulates that four new producers will be trained each year while the Project will support the first four in the financing of worms and material for the start-up of their business. Production of worm compost amounted to 40t in 2005.

Service provision

The Project is increasingly putting emphasis on identifying and supporting private service provision in the ornamental sector – as in the case of the worm compost specialist mentioned above. A halt has been made to directly supporting out-growers – but rather encouraging nursery owners to develop their own network – as in the cases of bedding plants and cut flowers. Contacts have also been made with service providers based in Serbia who are importers of ornamental seedlings who have access to the most recent technical developments – with a view to linking them with the most advanced nursery owners.
Swiss Project for Horticultural Promotion-Kosovo

Industrial and worm compost summary

Initial situation (2001)
Compost - a key input for nurseries - was not produced commercially in Kosovo in 2001. Some of the nurseries were producing a relatively poor quality substrate for themselves. The estimated demand for the compost was quantity imported was about 600,000 litres – valued at around €120,000 – and sourced from Bulgaria, Macedonia, Serbia and the Netherlands. It was sold mostly through agriculture input dealer shops.

Value chain aimed for
• Vibrant local production through a range of successful private composting units (both industrial and worm);
• Consistent high quality of the product and ease of marketing; and
• Existence of at least one private service provider.

Evolution of the Programme

<table>
<thead>
<tr>
<th>Year</th>
<th>Clients involved in industrial compost</th>
<th>Qty of industrial compost produced (t)</th>
<th>Clients involved in worm composting</th>
<th>Qty of worm compost produced (t)</th>
<th>No. of producers who tested</th>
<th>% value chain completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2002</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>2003</td>
<td>1</td>
<td>60</td>
<td>1</td>
<td>1</td>
<td>15</td>
<td>12%</td>
</tr>
<tr>
<td>2004</td>
<td>1</td>
<td>100</td>
<td>2</td>
<td>20</td>
<td>25</td>
<td>23%</td>
</tr>
<tr>
<td>2005</td>
<td>1</td>
<td>150</td>
<td>4</td>
<td>40</td>
<td>30</td>
<td>34%</td>
</tr>
<tr>
<td>2006 expect</td>
<td>2</td>
<td>300</td>
<td>8</td>
<td>100</td>
<td>60</td>
<td>56%</td>
</tr>
</tbody>
</table>
Annex F

Herbs & teas

Introduction

Kosovo has a long tradition in the collection of wild herbs and teas (H&T) - collection and marketing in former Yugoslavia being carried out by a well organized network of state-owned agriculture cooperatives and marketed mainly to processors in Slovenia, Croatia, Serbia and Germany. There was no tradition of cultivation.

Wars in the former Yugoslav states disrupted all linkages and marketing channels so that, by 2002, commercial collection in Kosovo had ceased. Three small processors, however, started to produce tea bags using imported raw material of 15-20 species including cultivated species such as chamomile, menthe, marshmallow and melissa and wild species such as linden, nettle, rosehips and elderberry.

An international study in 2002, followed by a stakeholder workshop, identified the potential of the Herbs and Teas sub-sector to provide considerable employment and income for the more isolated rural areas. It was considered that Kosovo had the potential to export H&T to the Western European market – but also realised that large quantities of produce would be needed to attract such customers – problematic when re-starting an industry from scratch. Some export commenced to neighbouring countries but was small-scale, based on individuals and not highly organised.

Objective and strategy

The objective of the Project intervention was to contribute to the generation of employment and income through the development of the herbs & teas sector. The strategy progressively established was one of value-chain development with particular emphasis on (i) promoting the introduction to small farmers of the commercial cultivation of H&T, (ii) assisting one or more individuals to develop processing and marketing capacities and, (iii) promoting networking and collaboration within the sector – including that for market exploration.

Establishing the value chain

The Project - backstopped by FILB (the Swiss organic research institute) – organised a workshop in February 2002 – involving interested farmers, processors/tea bag enterprises and NGOs involved in sector with the purpose of defining the Project’s H&T strategy. The workshop concluded that farmers should be supported in cultivation and considered that the three tea bag enterprises constituted a good initial market.

Menthe piperita was the first species to be introduced for cultivation (in 2002) and the cultivated produce proved to be of much higher quality than that imported. Subsequently Marshmallow, Melissa, Sage, Thyme, Origano, Sweet basil, Chamomile and Lavender were progressively introduced up to 2005.

Planting material for introduced species was initially sourced from Serbia as was the technical advice and equipment. By 2005, however, planting material for four of the species was being produced in Kosovo by the main client – the processor Agroprodukt.
Cultivation was initiated in 2002 with 6 farmers in the Istog region and the number involved had fallen to just three by mid-2005. Considerably more interest, however, materialised in late 2005 by farmers of Rahovec, Dragash and Vushtrri once they witnessed that the main processor had established a full processing chain and was also able to supply planting material and advice. Eleven clients were cultivating in late 2005 – a number that is expected to increase to 21 in 2006.

Initially the Project limited its involvement to cultivation but it was subsequently realised that its support in establishing drying and processing capacity was crucial if the industry was to take off. It was concluded that such capacity would also be used for the processing of wild collected H&T thus speeding up the accumulation of the critical mass of product that would attract major buyers.

The Project co-financed a range of equipment for the main client – Agroprodukt. Initially 3 driers were introduced (diesel, firewood and solar) with the latter two proving appropriate. In 2005 a separator, calibrator and chopping machine were added, completing the chain. Agroprodukt is repaying the full amount of the Project’s contribution as a return component by providing planting material and advice to producers selected by the Project.

Two processors were supported in developing new packaging for the local market – the tea bag enterprise Herba with glass pots and labels as a new product for supermarkets (ultimately unsuccessful) and Agroprodukt, in 2005, with 0.5 kg packaging and labels for oregano - targeting restaurants and pizzerias.

The main challenge for the sector is the further development of the link between cultivators and collectors, on the one hand, and the export market on the other – given that large quantities of produce from large number of cultivators and processor are required to interest export markets. The now-terminated US-financed Kosovo Business Support Project (KBS) contributed to this process in 2004 by promoting the establishment of the Kosovo Medicinal and Aromatic Plant Association (KOMAPA) – but the latter has proved inactive. KBS’s successor – KCBS – is promoting the collection and marketing of wild herbs.

In Istog municipality the value chain can be considered nearing completion (see the evolution of herbs and teas later in this annex). A total of 5.5 tonnes of dried herbs and teas of 9 species were produced in 2005.
Scaling up

Scaling up of cultivation commenced in late 2005 with 10 new clients from three municipalities (Dragash, Rahovec and Vushtrri) planting four species - melissa, menthe, origano and lavender. Thee others will plant menthe and marshmallow in early 2006.

Further scaling up is likely to be promoted by encouraging the establishment of a drier in Dragash.
Herbs and teas summary

Initial situation
Kosovo has a long tradition of the collection of wild herbs and teas – with both the collection and marketing being organised by the network of state-owned agriculture cooperatives. The main customers were the big processors in Slovenia, Croatia, Serbia and Western Europe (mostly Germany). There was, however, no tradition of cultivation.

The wars in the former Yugoslavia disrupted all these linkages and marketing channels. By 2002 there was no longer any collection, let alone cultivation. Three small tea bag packers, however, existed using up to 20 species – but relying entirely on imports.

Objectives of the Value chain (VC)
The aim was three-fold. The first was to introduce the practice of the cultivation of herbs and teas in order both to provide employment opportunities for farmers as well as to establish the herb industry on a more ecologically sustainable basis. The second aim was to re-establish the processing and marketing part of the value chain so that it would be of service for both cultivated and collected raw material. The third aim was to promote networking and collaboration within the sector – including that for market exploration. The main elements regarding ‘cultivation’ are as follows:

- Introduction of a range of species based on market demand.
- Local production of planting material accessible to clients.
- More effective weed control – overcoming the main expense of herb production through improved chemical control before soil cultivation and planting as well as the use of ground cover to physically prevent subsequent weed growth.

The processing and marketing chain required:
- At least one sustainable processor with a functioning processing chain comprising a drier (to maintain the proportion of essential oils and situated as close as possible to the source of supply to reduce transport costs) as well as a separator, calibrator and chopper.
- A purchaser of raw and processed material who has access to internal and external buyers.
- Attractive packaging and labels for sales to retail outlets and restaurants within Kosovo.

<table>
<thead>
<tr>
<th>Year</th>
<th>Nb. Clients involved</th>
<th>Hectares covered</th>
<th>Nb. of species</th>
<th>Dried yield Kg</th>
<th>% value chain completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>6</td>
<td>1.9</td>
<td>1</td>
<td>300</td>
<td>0%</td>
</tr>
<tr>
<td>2003</td>
<td>6</td>
<td>1.3</td>
<td>3</td>
<td>1,040</td>
<td>0%</td>
</tr>
<tr>
<td>2004</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>1,500</td>
<td>25%</td>
</tr>
<tr>
<td>2005</td>
<td>11</td>
<td>2.5</td>
<td>9</td>
<td>5,570</td>
<td>62%</td>
</tr>
<tr>
<td>2006 expected</td>
<td>21</td>
<td>5.5</td>
<td>9</td>
<td></td>
<td>75%</td>
</tr>
</tbody>
</table>

Calculation of % value chain completed

<table>
<thead>
<tr>
<th>Element</th>
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<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006 est</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction of new species</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Production of planting material</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Chemical Weed control</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Ground cover</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>Processor operating drier</td>
<td>t</td>
<td>t</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Proc op other machinery</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Packing &amp; labels</td>
<td>o</td>
<td>t</td>
<td>o</td>
<td>t</td>
<td>x</td>
</tr>
<tr>
<td>Purchaser</td>
<td>o</td>
<td>o</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>% VC completed</td>
<td>0%</td>
<td>0%</td>
<td>25%</td>
<td>62%</td>
<td>75%</td>
</tr>
</tbody>
</table>
Annex G

Integrated production

Introduction

The necessity to promote a more ecological way of production - as well as to reduce its cost - had been identified early in the Project and several training sessions were organised abroad for Project and Ministry staff on the subject of Integrated Crop Management (ICM) otherwise called Integrated Production (IP).

In order to provide elements for the definition of the IP strategy, the Project engaged two students (one Swiss, one Kosovar) in 2004 to evaluate the current situation in crop management practices in cabbage and tomato production. They were backstopped in this work by CABI Bioscience of Delemont, Switzerland. Data were collected from fields in three different regions of Kosovo and results presented in a workshop organized with the participation of producers, input suppliers and institutions (Ministry of Agriculture, University and Peja Institute). An IP focus group was created within the Project and included a specialist from the Ministry of Agriculture.

Agreement was reached with the Ministry and with CABI Bioscience in late 2004 to collaborate on the promotion of IP in Kosovo – even though, at that time, insufficient funds were available. In early 2005 the Ministry took over the leading role in the focus group (later termed the ‘steering committee’) and two main activities were agreed upon. The first – the establishment of technical guidelines - was to be led by the Ministry while the second - implementing IP Farmer Field Schools (FFS) - was to be led by the Project. Both were to be backstopped by CABI.

A start was made by CABI providing 2 weeks of training in February 2005 to twelve individuals comprising interested farmers, potential service providers, and Ministry and Project staff on the basics of IP and to equip future facilitators with the essential methods, skills, and knowledge necessary to facilitate and implement FFS on tomato IP.

Technical guidelines

The definition, objectives and principles of IP provide the conceptual roof resting on two technical pillars, namely the two general technical guidelines defining (i) the general standards for organisation promoting IP and that of its members and (ii) the general agronomic requirements valid for all crops. Within this construction are (iii) the crop specific guidelines that define in greater detail the requirements for each crop. This is a conceptual basis within which IOBC has established endorsement procedures and in 2004 has published the general guidelines (I and II) but has also developed Crop Specific Technical Guidelines III.

Technical Guideline I defines the legal status of the IP – Organizations seeking IOBC endorsement and describes minimum requirements to be fulfilled by organizations and their members.

Technical guideline II provides the general agronomic rules and minimum requirements, clearly defined as mandatory rules or “must” items to be met by all farmers participating in IP programmes endorsed by IOBC, on all types of farms and in all geographic regions.

Technical guideline III is prepared on basis of Guideline I and II and specify the minimum requirements and recommendations in individual crops. Their objective is to provide guidance to regional IP organizations wishing to establish their own guidelines and IP programs according to IOBC standards.
The Ministry is in a process of preparing of technical guidelines supported by CABI Bioscience, Switzerland.

Farmer Field Schools

FFSs were operated on outdoor tomato production on two sites (Mitrovica and Gjilan) from May to September 2005 with attention paid to technical issues such as identification of pests and diseases, plant nutrition, soil management, insect life cycle, proper irrigation, weed control and determination of economical threshold. Sessions were organised once per week with 6-10 farmers in attendance. One facilitator was selected for each site with the other facilitators participating as part of their on-going training.

The FFSs were based on the following four principles: frequent field observation, natural conservation of enemies and farmers understanding of the agro-ecology.

The experience with the first two FFSs was mixed. The approach was considered a valuable and interesting tool by the facilitators and a new concept of production was learnt. On the other hand, the participation farmers was intermittent, mistakes were made with facilitation and with the choice of facilitators, and the farmer group proved too heterogeneous in terms of knowledge about tomato production and of common agricultural practices. One of the two crops failed completely due to mistakes of facilitation – not an encouraging start for the participants.

Lessons learnt,

Even though it is still considered that the FFS approach might be a good tool for IP promotion and transfer of knowledge, modifications are required such as more training for facilitators, the frequency of sessions to be reduced, and farmers to be more encouraged to experiment on their own plots.

It is understood that benefits from IP might be long term and not sufficiently obvious in the short-term – but this risks destroying the critical mass of enthusiasm that is necessary to promote successful FFSs. It has to be remembered that the object of the component is not to run FFSs – but rather to promote IP. It may well be necessary to examine other approaches – even if only in the short term.

The need for a long-term strategy

A long-term strategy for promotion and implementation of Integrated Production in Kosovo is being discussed. Activities for the future have to be designed keeping in mind the objective of reaching a critical mass.

The project (if it is extended) is likely to have the resources to focus on the implementation of IP through FFSs in only a few crops – possibly a maximum of three crops within the next five years. Many FFSs could be carried out in each crop over several years if the number of crops is limited – thus leading to a critical mass of awareness and of produce on offer in the market for those particular crops. The promotion of an IP-label, however, is likely to depend on the availability of a wider variety of IP crops in the market.
Annex H

Post–harvest

Initial situation

Before the war post-harvest activities were well organized in the public sector. The state-owned enterprises and cooperatives operated large-scale farms and sometimes were integrated with processing plants in Agro-Kombinats. These latter enterprises concentrated on the production of raw material for the processing industry and for the formal market.

The areas dedicated to cultivation of fruits and vegetables have always concentrated in the south of Kosovo - namely the regions surrounding the cities of Rahovec, Gjakova, Prizren, Suhareka - in Dukagjini Region - and Viti and Gjilan in Anamorava Region.

The two main processing plants were established in the 70s. The Progress Factory in Prizren had a capacity 9,000 t per year of processed vegetables and fruits and a storage capacity of 5,000 t. The juice factory Ereniku in Gjakova could process 50,000 t per year of fruit. Ereniku was almost completely destroyed during the war and is no longer functional. Progress was not seriously damaged. A private company – Abi-Elif – currently rents a section of the factory and has started processing vegetables and fruits – almost all the raw material being imported – mainly from Turkey.

Kosovar families have a tradition of preserving vegetables such as white pepper with carrot, garlic, parsley, cucumber, green tomatoes, red pepper etc. and the making of ajar – a pepper paste - for their own needs. Only industrial preserves are accessible to the ordinary consumer. Rural families have experience in making various jams such as plum, quince and grape – but again, just for their own use. Rural families also dry fruit – particularly favoured is plum. Serbians and some Albanian and bosnjak families (Rahovec and Peja region) make raki and wine from grape, plum and apple and also sell some commercially.

There is virtually no cool or cold storage capacity in use with the exception of a deep freezing unit at Progress currently hired by Abi Elif. Other large state-owned storage did exist but are now out of operation. No private cold storage is available.

One investor has recently established a pack-house near Pristina at Milosheva called ‘Bujaria’. It included cleaning, grading, packaging and storing facilities for vegetables and fruit.

Private farmers are mainly are storing vegetables and fruits in the different places which fulfil only the very minimum requirements – such as the basements of houses or floors of empty houses.

Carrot washing unit

A second-hand fixed washing unit, with a capacity of 300kg/hour, was co-financed with a farmers’ group in Lutogllava, Peja, in 2004. In the end it was utilised by only the leading member of the group. He, however, found that it greatly reduced a serious labour peak at washing time and, moreover, by using a clean source of water allowed fully-washed carrots to be offered to the market – replacing the rather unhygienic method of washing the product in the river. He has now established a reputation as a reliable carrot supplier to the Peja market. The introduction of the washing machine was a major factor in encouraging him to expand his carrot enterprise from 1.8 ha in 2004 to 2.5 ha in 2005 – and he is planning a further expansion in 2006.
The original objective of the Project, however, was not achieved since the washing machine was destined for a group of farmers - the fact that it was not mobile militated against this. A mobile machine operated by a service provider would probably have had greater success.

**Tomato grading tables**

Grading tables were introduced to five tomato producers in 2002 after they and traders had participated in a workshop on quality standards of six crops and on the importance of grading to achieve higher prices. The practice did not catch on since, according to the producers the market was not differentiating between classes of produce.

**Onion storage**

The construction of a simple 8-tonne wooden-slatted onion store was co-financed in 2005 with one client in Rahovec – and was intended as a trial and demonstration of the financial benefits of such an investment. The latter amounted to €2,100 and the onion prices rose from €0.15 at harvest in August to €0.22 when he sold the last of his onions from the store in early October. It was an unfortunate year to test the store since the quality of the onions from the field was too poor to store for long periods. If he had stored all his 8 t until October (not just part of them) and then sold his return during 2005 would have been €560\(^{49}\) on an investment of €2,100 after just 2 months. He is confident, however, that in a normal year he could store until March and do so very profitably. He plans to at least double the capacity of the store in 2006. Several of his peers have shown their interest by visiting his store. The perceived advantages perceived by them are not just the financial return obtained by selling at higher prices periods – but the avoidance of the hassle of selling quickly at harvest time.

**Vegetable preserves**

The Project introduced to the women’s association ‘Drita e Krushes’ the idea that it could start a semi-commercial enterprise involving the pickling of vegetables (that were already being grown by the 11 members) and marketing the product. Initially the women were happy to be involved in the processing – but, being quite traditional, were not willing to be involved in marketing. They met up with a lady from Pristina who was willing to take on the marketing responsibilities from them.

The Project has assisted this association for three years (2002-4) but on a declining basis. Support has included training, inputs, cooking equipment, packaging and participation in fairs. The Project ceased to offer direct support at the end of 2003. From an initial production of 1.5 t in 2002 the women (by now numbering 20) reached 7 t in 2005 with a net income amounting to €8,000. Moreover they are now more confident in marketing and have taken over much of this responsibility.

The vision of the association is now to establish the mini-factory for their enterprise.

Caritas-Switzerland mandated the staff of SPHP-K to support another women’s association – Hareja – in Rahovec in advising on the development of their processing business.

Women in Kosovo – particularly in urban areas - are increasingly engaged in paid work and have less to produce their own preserves. The demand for good quality ‘homemade’ preserves is, therefore, likely to increase substantially. This presents a

\(^{49}\) € 0.07 x 8,000 t.
considerable opportunities for women in rural areas whose families are already involved in the cultivation of vegetables.

**Vegetable cooling room**

The Project co-financed (18%) the construction of a 90m² cool room with an experienced green house producer near Pristina in order to facilitate the handling of vegetables between harvest and the market and to explore the value of such an investment and whether it would be applicable for other producers. The construction is near completion.

**Soft fruit**

**Grading** – The Project has organised numerous workshops in which the importance of grading strawberries was stressed and quality standards discussed. This appreciation took a considerable time to take root. A marked improvement was noticed when one producer took the lead in marketing for his colleagues and when big supermarkets started to be targeted.

**Processing** – The processing of top fruit started to be addressed in 2004 with three training sessions and packaging and labelling being given to women from strawberry producing families in Babaj i Bokes and Korenica near Gjakova. The jam sold well (even if the quality was nothing special) and the women encouraged. One family even purchased a production line on credit for €3,500 but, unfortunately it turned out to be inappropriate. Swiss Contact provided a Senior Expert in 2005 to provide more advanced training to two of the women – which resulted in a marked increase in the quality and, moreover, with reduced unit costs. The Expert also trained one of the Project’s staff who has subsequently trained strawberry producers in two other areas of Kosovo – Debelide and Planqor. The family in the latter village is particularly pleased with the result since they were having problems marketing their fresh raspberries and blackberries. In two years, soft fruit jam production has been introduced and has led to the production and sale of 1.6 tonnes in 2005 with a value of around €4,700.

Processing has already proved itself as an important potential asset for soft fruit producing families. Indeed with raspberries and blackberries it may prove to be the main product sent to the market. Processing also lends itself to women’s involvement (handily located at the house) and control. Ultimately it could improve many women’s status in their households and in society as a whole50.

<table>
<thead>
<tr>
<th>Year</th>
<th>Clients involved</th>
<th>Strawberry Kg</th>
<th>Raspberry Kg</th>
<th>Blackberry Kg</th>
<th>Total/ Kg</th>
<th>Price €/Kg</th>
<th>Total value €</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>3</td>
<td>750</td>
<td>150</td>
<td>200</td>
<td>1,100</td>
<td>2.35</td>
<td>2,585</td>
</tr>
<tr>
<td>2005</td>
<td>11</td>
<td>*650</td>
<td>570</td>
<td>410</td>
<td>1,630</td>
<td>2.35</td>
<td>3,830</td>
</tr>
</tbody>
</table>

* The production of strawberry jam declined in 2005 because of vibrant fresh sales.

50 See Annex K – Gender and minorities
Apple storage

One of the reasons for the organisation of a study trip to Macedonia (the main exporter of apples to Kosovo) in 2003 was to examine the simple apple storage to be found there. The Project subsequently co-financed the construction of a (very simple) apple store with a capacity of 40t in 2004 by an orchardist from Peja who had participated in the visit. In fact the technology used – just limited to insulation – was too simple. While the store was not in operation for the 2005 season, apples placed in an adjacent store suffered considerable damage from rotting.

It appears that the Project embarked on an investment with insufficient understanding of the technology involved. The importance of apple storage to the future development of the top-fruit industry is now well understood as is the importance of accessing professional advice on storage before trying to assist producers. The Project has recently started exploring with USAID-KCBS to jointly promote the development of the apple industry with KCBS taking the lead in quality control and storage.
Annex I

Marketing

Initial situation

During the 80s and 90s Kosovo farmers supplied the Yugoslavian regional markets with fresh produce. After the troubles, this market was blocked with the former market linkages between producers and traders broken. The marketing system was effectively destroyed for Kosovan farmers.

Imports of fresh fruits and vegetables before the war was strictly controlled by government through quotas and only a few companies were able to supply the market mainly for out-of-season production. Macedonia was the main source of such imported produce51. The demand for off-season vegetables during this period, however, was marginal since consumers were used to using preserved products.

The two production years of 1999 and 2000 were effectively lost with producers badly affected by the destruction the war caused – 90% of agricultural machinery, for example, was destroyed.

Traders took advantage of the disarray in production to systematically import fresh fruit and vegetables into Kosovo for both the main and off-seasons quickly dominating both markets – a situation that is largely unchanged in 2005. The strong currency52 used in Kosovo only increased the attractiveness of the local market for the producers of neighbouring countries who had not been affected by disruption.

The local vegetable sector that re-emerged was characterised with a short season of production – the market supply with local production is only for short period of time. Pepper and tomatoes, for example, the most important of the vegetables, was supplied to the market only from July to August. This led to overproduction at that time of year and, consequently, low farm-gate prices.

Local produce, moreover, were compared unfavourably with the imported. They were generally not graded, poorly packed, of low quality – and sold only through direct channels (roadside markets, local markets). In addition little market information was available. While the vegetable sector showed these most obvious weaknesses – the situation in other horticultural sectors ie fruit industry, ornamentals and herbs and teas was similar.

In brief, the local market for horticultural products was dominated by imports. Local products were hard to position in the market that was already occupied by imports.

An overview of strategy and implementation

The first phase (2001-2) of the project focused on the collection and analysis of data of horticulture products in order to increase understanding of the sector. New species and varieties of winter vegetables were tried in order to ascertain their potential for the supply of vegetables to the market throughout the year.

Market information was collected. Two studies were carried out – (i) a survey of consumption habits and purchasing behaviour of fresh fruit and vegetables, and (ii) a study of the fruit and vegetable market in the Balkans. Price monitoring of the fruits and vegetables in the Pristina market was started and results disseminated through different

51 The free trade agreement between Yugoslavia and Macedonia was applicable until 2005 when a new agreement between Kosovo and Macedonia was signed.
52 The German mark was the Kosovo currency until the introduction of the Euro.
channels. Information was analysed shared with stakeholders. Market response to pilot improved packaging initiatives was tested.

During the Second Phase (2003) emphasis was placed on supporting clients in the promotion of their products in local fairs. A strong promotion campaign was carried out, for example, for soft fruits and the brand name ‘Nga toka jone’ ('from our land') introduced.

The priority in the on-going third phase (2003) has been increasing the quality of local products through introducing quality standards, producing a quality label and improving packaging.

Individual marketing components

The Project intended that producers would become more aware about market demand and trends and how to compete more successfully against imports. These individual activities that were to develop this awareness are presented in the following section.

Collection and dissemination of market information

Price monitoring & quarterly market trends

In view of the absence of data from other sources, the Project commenced weekly price monitoring of fresh fruits and vegetables in the main wholesale market in Pristina (including the source of produce) from March 2001 through direct interview of traders. This data has been disseminated in variety of ways including a ‘Quarterly market trend report’

The information has been widely appreciated and has been used in production planning with project clients – including what crops to cultivate and when. The number of subscribers to the e-mail version increased rose to 80 within three months of the start and included farmers, MAFRD, NGOs, MAFRD and other horticultural stakeholders. The information was placed on the Project’s webpage as from December 2002. Dissemination was also done through workshops with farmers. The acceptance of the quarterly reports, however, was not satisfactory – possibly because it duplicated other methods of dissemination.

Examples of price monitoring results are presented on the following page.

Market surveys

Five market surveys were conducted to complement information derived from the price monitoring and to guide the selection of project activities.

The surveys are as follows:

- A quick market survey for winter vegetables, implemented in July 2001, gave the first indications of the market potential for winter vegetables – and led to the promotion of the latter in late 2001 with the emphasis on carrots, onion, leeks, cabbage and spinach.
- The survey on consumption habits and purchasing behaviour for fresh fruits and vegetables in Kosovo, September 2001, clarified these issues and became the most valued of the surveys carried out. It led to a decision to widen support to apple production.
- The study on the market for fruit & vegetables in Kosovo and the Balkan region, August 2002, showed that Kosovo has very strong potential to supply local and export markets with white beans and lettuces. This in turn prompted more efforts for these two crops – a decision that has had, at least in the case of lettuce, a considerable benefit for the country.
- The study on consumer behaviour regarding fruit and vegetables, April 2004, reinforced the understanding that quality is a key factor in the buying decision of consumers - followed by price, freshness and the origin of the produce.
- A rapid market appraisal in value chain development for vegetables, February 2005, gave a group of key producers to develop their skills in identifying market demand. It also led to a proposal to explore the potential of promoting the establishment of a pack-house for local produce.

Crop market profiles

The accumulating experience and information of market conditions for individual crops is starting to be summarised in crop market profiles. These present data and analysis on prices and price trends, source of supply, estimations of market and import volumes, local production data, marketing channels, packing requirements and consumer preferences (variety, type, colour, shape, ripeness). The objective of these reports is to start developing greater understanding of the market and its potential for actors – including producers themselves. So far profiles have been produced for tomatoes, onion and strawberry – with apple in preparation.

Packaging development

Improved packaging was introduced to clients in order to assist them in competing with imports. The packaging was introduced and promoted through events e.g. fairs, open days, points of sale etc.
**Vegetables:** Improved packaging and labelling has been introduced for tomatoes, cherry tomatoes, lettuce, garlic, leeks, carrots, white beans, onions, garlic cloves for multiplication and potatoes. The regionalisation of labels was introduced in 2002 so that consumers could recognise the more specific origin of products. A country-wide brand name 'Nga toka jone' was introduced in 2003 but replaced by 'Natura' in 2004 – when more emphasis was placed on quality standards.

**Soft fruits:** Improved packaging was first introduced for strawberries in 2002 – with the range of packaging types widening in subsequent years. The brand name 'Frutet e imëta nga Kosoves' was introduced.

**Ornamentals:** Packaging has been developed for roses and labels and hanging baskets for bedding plants.

**Worm and industrial compost:** Labels and packaging were introduced.

Improved packaging has shown considerable benefits with some products and in certain situations. When successful it is because it attracts higher prices, facilitating sales or achieving consumer recognition. The experience with strawberries (presented later in this section) provides insights into the different situations in which producers may, or may not, utilise the packaging.

Sometime the packaging has repaid its cost two-fold – as in the cases of roses with the packed produce selling at €1.00 compared with €0.75 for the un-packed and with strawberries (up to €1.85/kg versus 0.80). Cases where sales were facilitated include onions and carrots.

Clients have continued organising and financing the purchase of packaging after the Project stopped only for two crops – carrots and strawberries. The Project decided in 2005 to stop directly financing such packaging (apart from some new clients in their first year) in order to encourage the sustainability of the investment.

The Project provided some support in 2002 to the packaging industry itself – encouraging existing businesses to produce wooden boxes (in Rahovec) and cartons (in Xerxe and Prizren). Since that time support has been limited to developing linkages between producers and local packaging factories.

**Branding**

Collaboration with the Horticultural Promotion Group led to the development of the brand 'Nga toka jone' ('from our land') in order to differentiate local produce from the imported.

The market survey in 2004 influenced the development of the quality brand name (Natura). The soft fruit producers with project support developed two brand names – 'Frutet e imëta nga Kosova' ('soft fruits from Kosovo') for fresh fruit and 'Freskia' ('freshness') for jam.

The general brands were often misused – especially by not adhering to the quality standards agree on. No regulation had been passed nationally to register the brands, nor was there an organisation strong enough to control their use.

**Product promotion-market linkages**

The promotion of local products was carried out mainly through events (open days, field days), participation in fairs and exposure by the televised media.

**Open days and field days**

Open days and field days were used to promote new products, share experiences with producers of different regions and create new market linkages with the potential buyers.
and traders invited to these events. Such events held are included in the Timeline in Annex S.

**Participation in fairs**

The Project has supported participation of client in seven agricultural fairs organised in Kosovo (mainly in Gjakova and Pristina). It was found that such participation was invaluable in creating linkages between actors – especially with market actors. Clients have increasing participated in the costs of participation.

**Television and other media**

The Project started utilising the media in its first year of operation in order to increase its visibility - the first event covered being the organised export of Kosovo products to Switzerland on the national television channel - RTK⁵³. By 2002, the media started to be used to promote the awareness of the clients’ new products in the market. Project activities have been covered regularly in the media (television, radio and press) but most frequently on RTK’s weekly agricultural programme.

These appearances have created considerable awareness of both local horticulture and the Project itself amongst the population. This interest has translated itself into numerous requests for collaboration from farmers – a factor found particular useful in the selection of clients for scaling up of strawberries and apples.

Altogether the Project’s activities have figured on 45 occasions on national television over the last five years, 13 on national radio and 20 occasions in the print media (Annex N).

**Vegetables**

**Carrots**

The cultivation of carrots was limited to household gardens – commercial production being practically inexistent – carrots not even being listed in the governments household survey of 2001. Carrots were imported neighbouring countries such as Turkey, Macedonia, and Yugoslavia and sold in 5–10 kg plastic packaging.

The market survey of July 2001 identified the high demand of carrots by restaurants. The second survey (consumption habits) indicated an annual consumption 9,500 tonnes – persuading the Project of the crops potential.

**Implementation**

Two-kg plastic packaging was developed for 8 carrot producers in 2003 along with labels with the producer’s contact information. The monthly rent for stands in three regional markets (Peja, Prizren and Gjilan) was also co-financed. A washing unit was co-financed for an association of producers Lutogllava in 2004. The design of the label was handed over to clients in Rahovec in 2005 to facilitate their own ordering of packaging material.

The packaging development had a strong impact especially on farmers of Rahovec – especially on the ease of selling and consumer recognition. These clients continued to order and pay for their packaging. The use of the washing machine in Lutogllava also had a significant effect on the ease of selling in the Peja market and influenced the producer to increase production from 1.8 ha in 2004 to 2.5 in 2005 and to plan a further expansion in 2006. ⁵⁴

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⁵³ Radio and TV of Kosovo
⁵⁴ According to Pristina traders. Data from MAFRD, however, shows 1,397 ha was cultivated. MAFRD has considerably improved the accuracy of its statistics since 2004.
Onion
Agricultural cooperatives were large producers of onions before the war but, by 2001, no significant commercial production of onions was evident nor were local onions visible on the Kosovo market. Onions were, however, imported from Turkey, Serbia and Macedonia. The quick market and consumption habits surveys showed that onions had a strong market demand and was widely used by households and restaurants alike.

Implementation
Five kg netting and labelling were produced for different client associations in 2002 – each association having its own label. Even though consumers responded positively to the combination, only one member of all these associations continued to use the labels while client continued using the nets. It is thought that the flat shape of the locally-produced onions proved to be distinctive enough to achieve consumer recognition without the need for expensive labels.

Lettuce
The commercial production of lettuces during 2001 was insignificant – two farmers in Pristina Municipality producing a total of just 5,000 heads in the traditional period of May-June. Lettuce was mainly produced by households for their own use in the same period – with any surplus being marketed locally. Household consumption was similarly limited to the traditional two months with only restaurants beginning to utilise the product more extensively in different periods of the year.

Implementation
Four clients were involved in 2002 in trials with new varieties for spreading harvest days and in the promotion of marketing. 1.5 tonnes (over 5,000 heads) were produced altogether – much of it for the first time in green houses allowing for out-of-season production. An open day was organised with the participation of innovative farmers and traders willing to market the lettuces and clients also participated in the Gjakova fair 2002 which also allowed them to linkages with potential clients.

Nine new clients participated in 2003 raising production to 17 tonnes – their produce being present in the market for 8 months of the year.

By 2005 local lettuces were present in the market all the year round – but with limited volumes in the difficult month of August.

The case of lettuce indicates how market demand – initially from restaurants – influenced the type, scale and timing of production. Local producers took advantage of their comparative advantage of delivering freshness.

Garlic
Garlic is traditionally is grown for household needs with the surplus of production (particularly from Rahovec) being commercialised in local and regional markets. No commercial production appeared to be practiced in 2001. Demand is seasonal – being concentrated in the pickling period in August/September. A massive import of garlic from China occurred during 2002 through Dutch and Greek distributors.

Implementation
The Project aim was to increase the market share of locally-produced garlic. Two types of packaging were developed for the two main products – (i) 5kg nets and labels for garlic cloves for multiplication and, (ii) 25 gm tube nets in 10 kg cartons for consumption. Although imported garlic has been selling at €1.50/kg in 2005, the local produce has been successfully trading at €2.00 as a result of it quality.
Tomato

The consumption survey of 2001 indicated that tomatoes made up 16.7% of the average household’s consumption of fresh vegetables amounting to 3.7 kg/week. The local tomato grower has lost the Kosovo market since 1999 as well as opportunities for export. The local market became dominated by imports mainly from Turkey, Macedonia and Serbia. In a new development, fresh tomatoes began to be offered in the market throughout the year – as a result of these imports.

Presence of locally produced tomatoes, in any case, was very seasonal – mainly from July-August – the peak of production when prices were low.

Implementation

The project aimed to develop all-year-round production using new hybrid varieties and production techniques. Trials on new varieties and consumer testing were undertaken and beefsteak types found to have the most potential – followed by truss tomatoes.

Support was given for label design for different regions, brand name development and promotion, family packaging development of 5 kg wooden boxes for standard tomatoes, 1kg plastic containers for cherry tomatoes and facilitating farmer access to three regional markets, participation in fairs and market linkages.

Project support has resulted in producers starting to offer tomatoes to the market for 4.5 months of the year as apposed to the previous 2.5 months.

White beans

White beans are one of the most consumed vegetables by the Kosovar household with the consumption level throughout the year with some decrease in the summer. The local market was overrun since 2000 with imported white beans originating in Uzbekistan and Kazakhstan – and brought in by Turkish distributors. The price these import range between €.80 to 1.20 with local produce selling between €1.50 and 1.70. The Kosovo produce, however, retains a competitive advantage based on its quality that is highly valued by local consumers. Most highly valued are the white beans from Molliq – an autochthon indeterminant variety.

Implementation

The main objective of marketing support for white beans was the differentiation of the local indeterminant produce and targeting retail markets (supermarkets). 1 kg plastic bags with labels were introduced for this purpose in 2003 with clients participating in the Pristina Fair (and selling their packaged produce for €3.00/kg.

Soft fruit

Strawberry

There was no commercial production of strawberries during 2001 although cultivation was practiced in the past. The local market was dominated by imported strawberries from Spain and Greece in the early season and by Macedonia and Serbia in the main season.

Implementation

The first strawberries of project clients arrived in the market during 2002 and rose to 17.8% of the local market by 2005. The share of the market captured by all local producers amounts to 27% in 2005 (although the data supporting this figure are less robust.).
Marketing support involved product development – introduction of packaging, designing of the brand name, promotion through events and exploring new marketing channels – such as Pick Your Own. Links were created with packaging suppliers that led to clients ordering and financing their packaging without Project support.

Farmers used different types of packaging based on the buyers’ varying demands. Second-hand packaging (combination of wooden and plastic containers) was used for selling products in regional markets on the request of wholesalers who collected from the production site. The 650gm plastic containers promoted by SPHPK were mainly used for selling to supermarkets (Benaf, Prizren) and to other retail outlets (Pristina retail shops and the supermarket Viva).

The direct selling Pick Your Own (PYO) was successfully promoted twice (2004, 2005) with the satisfaction of both consumers and farmer. Farmers achieved a premium price without incurring costs for harvest and transport. The PYO strawberries were sold for €1.53/kg comparing to the normal retail price €1.23/kg.

Quality and freshness of locally-produced strawberries are the main competitive advantages compared to the imported produce. The rapid growth of the market share of the local product during the last few years is testimony to the considerable potential to compete successfully with imports and even to capture the whole of the Kosovo market in a few years.

**Raspberry and blackberry**

Raspberries are rarely be found in the Kosovo local market with only a small proportion of the population having knowledge of the fruit – mainly Serbs who used to cultivate them around Gjilan. Wild blackberries are more known by the rural population and are used for jam making in certain households.

*Implementation*

Support was provided to raspberry and blackberry growers in parallel with producers of strawberries – with the same 500 gm plastic packaging in 2004.

It is thought that the expansion of the production of raspberry and blackberry is not likely to be as dramatic as that of strawberries since market acceptance is, at present, much lower. The expansion may well be driven by processing the fruit into jams – since the initial experience with this has been encouraging.

**Ornamentals**

**Bedding plants**

Before the war ornamentals were produced by the municipalities’ enterprises such as Hortikultura in Pristina. They had good infrastructure – including heated greenhouses – and a well organised marketing system having several retail shops in Pristina. The SOE’s became largely inoperation and thus lost their market. This opened the way for traders to supply the market with imported products. By 2001 imported bedding plants dominated the market – mainly coming from Holland, Serbia and Montenegro. Two private nurseries had initiated production but on a small scale and had little impact on the market.

*Implementation*

The participation of bedding plant producers in fairs was facilitated as from 2002 and, during 2004, individual plant labels were introduced containing name of product/type, information about the producer and instruction for the care of the plant. Hanging baskets were introduced in 2005 in order to add value to their products.
Two strong private retail chains have developed (Labi, Lipjan and AgroCoop, Shtime). The former has further ventured into production of bedding plants and cut flowers with the support of the Project.

Local bedding plant producers are faced with strong competition from imports – many products (eg petunias). The sector is now developing rapidly and the Project is beginning to run down its interventions.

**Compost production**

Before the war an SOE around Istog produced compost for mushroom cultivation but was put out of operation during the war. There is no evidence of local production during 2001. Bedding plant importers also bring in compost – mainly from Holland, Serbia, Montenegro, Germany and Italy.

**Implementation**

The first locally-produced compost (worm compost) from Gjakova, promoted by the Project, came in the market 2003. The industrial compost produced locally came in the market during the year 2004. The local production capacity of compost doesn't meet the market demand. The producer was supported with 5 litre plastic packaging and with participation in the Gjakova and Pristina fairs in 2003.

The industrial compost producer from Klina was supported with 10 and 40 litre packaging as well as participation in the fairs during 2004 and 2005. His production is now widely available but the future sustainability of his business will depend on his being able to raise the quality of his product in order to compete with imports.

**Herbs & Teas**

Collection from the wild of herbs and teas was an important and comment enterprise before the troubles with collectors selling to SOEs and the latter linked to a wide network of buyers throughout Yugoslavia and Western Europe. All this organisation and linkages had broken down by the end of the war. No commercial cultivation of herbs and teas appears to have been carried out in Kosovo at all. The existing tea bags factories in Kosovo in 2001 were importing their raw materials from Serbia and Macedonia while the retail tea trade was dominated by imports.

**Implementation**

Tea bag producers were supported with glass packaging for bulk teas under the ‘Nga tokajonë’ label. The glass pots were distributed through the existing distribution channels but were not appreciated by the buying public who were not used to bulk teas. 0.5 kg polypropylene bags were introduced to a herb producer and processor for oregano in 2005. The results of this initiative are awaited. Tea bag producers participated regularly in the fairs organised in Gjakova and Pristina from 2002 to 2004.
Annex J

Machinery

Purpose and strategy

The Project has, where appropriate, introduced mechanisation in order to overcome constraints in production and post-harvest. Although these constraints were mostly related to labour use, such mechanisation is expected to allow an expansion of scale of operation thus increasing employment opportunities – as well as income. Examples of such cases include mechanised bed preparation, sowing, weeding, harvesting and threshing in vegetable field crops. It has involved equipment – mainly tractor-mounted – specific to the new crops introduced and, for this reason, previously unknown or unavailable Kosovo.

Once a machine is shown to be useful, the Project’s approach is to encourage input dealers to stock it and to promote the ownership of the equipment by machinery service providers.

Machinery hire in agriculture is already established as a service in the private sector. The Project’s involvement with such service providers, therefore, has been oriented towards the introduction of specialised machinery for horticulture that is so far unknown in Kosovo. The approach involves the Project in identifying the need for a particular machine, identifying supplier of machinery, under-taking the risk of purchasing at least one machine of any particular type, of testing it with clients in the prevailing local conditions and, if found attractive by producers, to identify an individual or business and to provide it with the machine for onward hiring to clients. The co-financing or pre-financing of the machine by the Project for the service provider is justified for two reasons. The first reason is to share the risk of machine might turn not to be useful in practice. The second reason that the volume of demand for the machine will initially be too small to justify the investment – bearing in mind that it is purchased for use in a value chain that is just beginning to get off the ground.

Machines introduced

Industrial compost

Four machines were purchased in 2003 to help establish the only industrial compost enterprise in Kosovo (Agroklinia) – a straw-chopping machine, compost mixer, vibrating sieves and wood chopper. 100% of the cost was pre-financed by the Project with 20% being repaid by the owner through a return component. The owner himself purchased two further machines – for packing and for disinfection. Agroklinia has progressively expanded its production and sold 150 t of compost in 2005.

Vegetables

Weed management

Two second-hand tractor-mounted implements were brought from Switzerland in 2003 in order to overcome weeding problems – a weed brusher and a weed burner. Neither has proved a success – partly, it is thought, because they require larger field sizes and more accurate row planting to be effective. Their ownership remains with the Project.

Sowing

Two machines have been introduced for row sowing of carrots, onions and spinach. (i) A tractor-mounted sowing machine was bought second hand from Switzerland and has shown good results - especially for carrots – but would perform better on larger fields.
The machine still is owned by the project. (ii) Five manually operated row seeders were distributed to farmers associations and have shown to be excellent for small plots. The Project, at the request of clients in Rahovec involved in carrot and onion production, is in the process of requesting an input dealer to import these machines.

**Carrot washing**

The purchase of a second-hand carrot washing machine was co-financed in 2004 with a client in Peja as an alternative to manual washing in the local stream. It has proved very successful in both reducing a major labour bottleneck as well as producing a final product that is more attractive, healthier and has facilitated marketing. The intention that the client would develop into a service provider for other carrot growers has not materialised, however, largely because the unit is not mobile. The introduction of a mobile machine is being considered.

**Onion set planter**

Onion set planting is currently carried out by hand – a laborious task that limits the scale of operation. A new and simple tractor-mounted set planter was purchased in late 2005 from Serbia with a view to overcoming this problem and is in the process of being tested by farmers. If successful, the machine could well be manufactured in Kosovo.

**White bean threshers and calibrator**

Threshing is proving to be a bottleneck with an otherwise successful white bean production. The Project has been looking for appropriate threshers for the last two years and, in late 2005, found, and imported, three - (i) a new tractor-mounted thresher purchased in Macedonia, (ii) a second-hand hand thresher bought locally, and (iii) a second-hand calibrator bought in Serbia. All these machines are simple and relatively cheap. They are currently being tested by clients.

**Herbs and teas**

A second-hand diesel-powered drier was financed in 2003 for the processor Agroprodukt but proved too expensive to operate. It was subsequently sold to a seedling producer who will utilise it as a growth room. The following year a new wood-fired drier from Serbia was co-financed and has proved successful – the Project’s contribution being repaid by a return component.

Agroprodukt’s processing chain was completed late in 2005 with the purchase of three new machines – a chopper, a separator and a sieve. All of the Project’s pre-finance will be paid back in the form of a return component, at which time the ownership of the machines will be handed over.

**Top fruit**

A motorised spraying machine, inherited from FAO, was handed-over in 2004 to a service provider against a 50% return component involving the free spraying of the Project’s demonstration orchards. The same client was provided with a new tractor-mounted hole-digger, purchased through a local machinery dealer, for the establishment of top fruit orchards. This will now be a further service that he will be able to provide. He is repaying the full cost of the equipment through the provision of hole-digging services free of charge. A second hole-digger was recently purchased and will be provided to another service provider in Anamorava Region.

**Growth room**

The ownership of the second-hand diesel-operated herb drier has been transferred to a vegetable and ornamental seedling producer (Agroalba), against a full return component,
to be used as a growth room. If successful, it could prove critical in the further development of Agroalba’s business.

**Machinery in the pipeline**

Two further machines destined for the carrot and onion producers of Rahovec are about to be ordered – viz a bed former and a pneumatic sowing machine. Negotiations are ongoing with the clients about the selection of a service provider to operate and own the equipment.

The list of machinery acquired is presented overleaf.

**Observations**

Initially the Project was most concerned with rapidly introducing techniques and technologies and less attention was given to obliging clients to cover the cost of the investment. As the Project gained in understanding and became more confident in its assessment of risk it progressively put more and more emphasis on client financial participation.

The Project recognises that farmers may need some time to recognise the benefits of appropriate machinery – especially when those benefits become more obvious as the scale of operation is increased.
## List of machines introduced

<table>
<thead>
<tr>
<th>Crop</th>
<th>Machine</th>
<th>Year</th>
<th>Country of origin</th>
<th>New / s-hand</th>
<th>Cost (€)</th>
<th>% pre-financing</th>
<th>% pre-financing to repay</th>
<th>Present ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compost</td>
<td>Straw chopper</td>
<td>2003</td>
<td>CH</td>
<td>S-hand</td>
<td>4,091</td>
<td>100</td>
<td>20</td>
<td>Client</td>
</tr>
<tr>
<td></td>
<td>Compost mixer</td>
<td>2003</td>
<td>CH</td>
<td>S-hand</td>
<td>7,143</td>
<td>100</td>
<td>20</td>
<td>Client</td>
</tr>
<tr>
<td></td>
<td>Wood chopper</td>
<td>2003</td>
<td>CH</td>
<td>S-hand</td>
<td>9,675</td>
<td>100</td>
<td>20</td>
<td>Client</td>
</tr>
<tr>
<td></td>
<td>Vibrating sieve</td>
<td>2003</td>
<td>CH</td>
<td>S-hand</td>
<td>2,273</td>
<td>100</td>
<td>20</td>
<td>Client</td>
</tr>
<tr>
<td>Vegetables</td>
<td>Weed burner</td>
<td>2003</td>
<td>CH</td>
<td>New</td>
<td>325</td>
<td>100</td>
<td>0</td>
<td>Project</td>
</tr>
<tr>
<td></td>
<td>Tr-mtd sower</td>
<td>2003</td>
<td>CH</td>
<td>S-hand</td>
<td>1,786</td>
<td>100</td>
<td>0</td>
<td>Project</td>
</tr>
<tr>
<td></td>
<td>Hand seeder</td>
<td>2003</td>
<td>UK</td>
<td>New</td>
<td>200</td>
<td>100</td>
<td>0</td>
<td>Clients</td>
</tr>
<tr>
<td></td>
<td>Carrot lifter</td>
<td>2004</td>
<td>Germany</td>
<td>S-hand</td>
<td>441</td>
<td>100</td>
<td>0</td>
<td>Project</td>
</tr>
<tr>
<td></td>
<td>Carrot washer</td>
<td>2004</td>
<td>Germany</td>
<td>S-hand</td>
<td>2,602</td>
<td>100</td>
<td>0</td>
<td>Client</td>
</tr>
<tr>
<td></td>
<td>Set planter</td>
<td>2005</td>
<td>Kosovo</td>
<td>New</td>
<td>640</td>
<td>100</td>
<td>0</td>
<td>Project</td>
</tr>
<tr>
<td>White beans</td>
<td>Tr-mounted thresher</td>
<td>2005</td>
<td>Macedonia</td>
<td>New</td>
<td>250</td>
<td>100</td>
<td>0</td>
<td>Project</td>
</tr>
<tr>
<td></td>
<td>Hand thresher</td>
<td>2005</td>
<td>Kosovo</td>
<td>S-hand</td>
<td>350</td>
<td>100</td>
<td>0</td>
<td>Project</td>
</tr>
<tr>
<td></td>
<td>Calibrator</td>
<td>2005</td>
<td>Serbia</td>
<td>S-hand</td>
<td>1,620</td>
<td>100</td>
<td>0</td>
<td>Project</td>
</tr>
<tr>
<td>Herbs &amp; teas</td>
<td>Diesel driers</td>
<td>2003</td>
<td>Kosovo</td>
<td>S-hand</td>
<td>4,200</td>
<td>80</td>
<td>0</td>
<td>Sold</td>
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<tr>
<td></td>
<td>Wood drier</td>
<td>2004</td>
<td>Serbia</td>
<td>New</td>
<td>7,370</td>
<td>70</td>
<td>0</td>
<td>Project</td>
</tr>
<tr>
<td></td>
<td>Sieve</td>
<td>2005</td>
<td>Serbia</td>
<td>New</td>
<td></td>
<td></td>
<td></td>
<td>Project</td>
</tr>
<tr>
<td></td>
<td>Separator</td>
<td>2005</td>
<td>Serbia</td>
<td>New</td>
<td>7,500</td>
<td>75</td>
<td>100</td>
<td>Project</td>
</tr>
<tr>
<td></td>
<td>Chopper</td>
<td>2005</td>
<td>Serbia</td>
<td>New</td>
<td></td>
<td></td>
<td></td>
<td>Project</td>
</tr>
<tr>
<td>Top fruit</td>
<td>Motorised sprayer</td>
<td>2004</td>
<td>UK</td>
<td>New</td>
<td>Given by FAO</td>
<td>0</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hole digger</td>
<td>2005</td>
<td>Italy</td>
<td>New</td>
<td>3,530</td>
<td>100</td>
<td>100</td>
<td>Client</td>
</tr>
<tr>
<td>Nurseries</td>
<td>Growth room</td>
<td>2004</td>
<td>Kosovo</td>
<td>S-hand</td>
<td>2,300</td>
<td>100</td>
<td>100</td>
<td>Client</td>
</tr>
</tbody>
</table>
Annex K

Gender & Minorities

Gender

Initial situation

The Kosovar society has been traditionally characterised by patriarchal structures and the strict division of work within the family. Men worked in the fields while women were involved in child-care and housework. A woman would move to her husband’s home after marriage and all productive properties of the household (buildings, animals, land, tools, machinery, etc) belonged to man. After World War II, women in former Yugoslavia won complete civil and political rights and gained access to education, employment, social welfare programmes, health care, and political office. Although they became better educated and increasingly employed, they did not win full equality in the job market or advancement to high social and political positions. Nevertheless, the ancient structures of society in Kosovo were slowly starting to change. By 1990, about a third of the workers in Kosovo were women and economic independence meant a lot to them effecting, as it did, their emancipation, their decision-making and family planning.

The Serb oppression in the 90s led to the removal of the Kosovo Albanian population to parallel structures, a change that hampered the emancipation of women. At the end of the 90s, less than 3% of women were employed\textsuperscript{55}. They were again forced to concentrate on child-care and the household and almost completely disappeared from public life. After the war of 1999, as the international administration started its reconstruction and institution building, it soon became clear that very few, if any, of the senior staff in the international administration (almost exclusively men) had an understanding of gender and gender-mainstreaming\textsuperscript{56} leading to many women’s activists feeling that their capacities and knowledge were unnoticed, that their voice was not heard.

Although some traditional rules and thinking patterns are still practiced and, especially in rural parts of Kosova, the traditional household structures still exist, there are areas in Kosovo, above all urban, where women are emancipated and given the same chances as men.

There are some government and NGOs that tackle gender issues in Kosova: UNMIK - Office of Gender Affairs (OGA); UNIFEM; Provisional Institution of Self-Government (AOGG) as part of the Office of the Prime Minister; Local Level - Municipal Gender Officers (MGO); Ombudsperson Institution; Civil Society NGOs (Kosova Women’s Network, Kosovo-Wide Business Women’s Network, Kosovo Women’s Lobby); International Donors; The National Action Plan; Constitutional Framework and Laws on Gender Equality and Anti- Discrimination (CEDAW)

Initial project strategy

No explicit gender strategy was established during the early years of the Project - although later, once a strategy was articulated, it was found that much of it had already been in operation. The Project strived to work with women’s as well as men’s groups and associations with the emphasis on income generation. A task force within the project team was charged with monitoring the involvement of women and of minorities in project’s activities, and with proposing new approaches. The approach and the focus have varied according to the opportunities that presented themselves – although product

\textsuperscript{55} Women in Kosova, between freedom and identity, Kosova Crisis Center
\textsuperscript{56} A gender approach to UNMIK administration in Kosovo, 2001
and market development, technical assistance and networking were normally utilised for providing the basis for developing entrepreneurial strategies.

SDC added gender and minority issues as a separate objective of the Project at the beginning of the second phase in 2003.

A PRA on “gender in horticulture” was organised in May 2004 by SDC and facilitated by LBL. The differentiation that emerged between different typologies of families (business orientated, widow-led, traditional and mixed-transitional) was found useful57. Furthermore, the clear focus that developed on income generation (both women and men’s contribution) largely reflected what the Project had been already doing – albeit not explicitly. Two findings of particular interest to the staff were:

- In the traditional family, gender is just one factor of discrimination - age is just as important - e.g. the elderly men manage the farm and it is very difficult for younger members of the family (both men and women) to bring new ideas.
- Families going into new businesses or income-generating activities such as berry production or ornamentals readily accept the strong involvement or even leadership of women.

The PRA identified a range of concrete measures to address the gender issue that the Project was already carrying out:

- Exchange events designed with the participation of couples in mind – such as exploring ways through which women could increase their contribution to the overall family income (e.g. study trip for women in jam processing and pickling vegetables).
- Initiation of professional mentoring / coaching. The Project used the experience, resources and marketing skills of some family enterprises to strengthen other clients – a situation that sometimes further developed into service provision (e.g. the nursery entrepreneur – Bahrije Durmishi – trained other producers in bedding plant production).
- Access to markets. The Project facilitated the participation of women in fairs – an approach that proved effective in expanding linkages and breaking down barriers.
- New horticultural enterprises - such as strawberry production - encouraged women to develop market-oriented activities and to generate income themselves.

Making the strategy explicit

The gender strategy was clarified in March 2005 taking into account the lessons learnt during four years of intervention. It was decided that:

The **gender objective** of the Project is that farming businesses benefit from practical and strategic changes in gender relations.

The **gender strategy** is considered as providing opportunities for practical and strategic changes in gender relations within farming families.

Practical changes cover improvement in the efficiency or ease of horticultural operations whether it is men or women that are involved. Examples would include improvements in any horticultural operation or component – e.g. herb collection through better identification of species or strawberry processing through training.

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57 See Chapter 3
Regarding women, strategic gender changes would involve an improvement in their status and self-esteem within the family. For instance, if herb collection or processing of strawberries was undertaken by women as businesses in their own right – with the women responsible for the planning, decision making, execution and profit-making. Alternatively, a wife developing skills in book-keeping may evolve to take primary responsibility for such an activity within the family’s business and subsequently become more appreciated by her husband and more involved in decision-making.

**Utilisation by women of project initiatives**

Some cases are presented below to illustrate ways in which women are beginning to participate in strategic gender changes.

- **Strawberry:** was a crop that was reintroduced as a commercial crop for family farms through women in Babaj i Bokes. Later it was found that husbands tended to take a lead in the production of the crop while women took charge of the processing and the marketing of jam – and, in most cases, the utilisation of the income. It is considered that women are benefiting practically from their involvement in strawberry production – but strategically from their management of processing. Processing of jam by women has spread to Debellde and Planqor.

- **Vegetable pickling:** the provision of marketing assistance to complement women’s production of vegetable pickles has proved attractive to women from Krusha e Madhe and has encouraged them to work in groups. Through the utilisation of a female service provider they have developed their own market in Pristina on the basis of quality control, product development and market promotion.

- **Study trips for women:** have created linkages between women and enabled exchange of knowledge between different geographical areas (eg women from Krusha, with vegetable processing expertise, with women from Babaj i Bokes, with soft fruit production and processing experience). They have also allowed the ‘show-casing’ of successful, emancipated, women.

- **Flower production:** Women in bedding plant production have tested its potential in trade fairs and are now determined to expand their range of products, increase production and take responsibility for marketing. Introduction of new technologies and exchange of experiences were important aspects of such promotion.

- **Worm compost production:** is recognised as an enterprise well adapted to the needs of women in rural communities and is being re-launched by the Project after an initial setback.

**Minorities**

**General Overview**

Prior to 1989 a policy of full ethnic equality was implemented by the Yugoslav Government. The unconstitutional abolition of the Province’s autonomy by Serbian authorities, however, began a process which has led to the marginalisation of minor ethnic groups. Firstly they were caught up in the conflict when Serbian security forces repressed the Albanian resistance movement. Escalating military operation led to the expulsion of an estimated 800,000 Albanians – or almost half the Albanian population, from Kosovo.

The definition of minorities in Kosovo is taken from the European Framework Convention for Protection of National Minorities and includes Serbs, Roma, Ashkalia, Cwergari, Egyptian, Turkish, Toresh, Bosniac, Croats, Vlach, Cerkesi and Jews.
Harnessing the energies and talents of Kosovo's working population is perhaps the highest priority for the transition. Prior to the conflict the social systems and social structures in Kosovo were polarized along ethnic lines, with a parallel system fulfilling the basic economic, social, and political needs of the Albanian Kosovar population and the formal structures of the Federal Republic of Yugoslavia (FRY) the needs of the Serb minority. In the post-conflict situation Serbia is still able to extend its influence over Serb 'enclaves' of northern Kosovo, albeit at a reduced level. For the Albanian Kosovars, whose extended family structures traditionally link rural with urban societies and incorporate the US and European-based diasporas, it is unclear how well the parallel networks existing during the troubles have been able to respond to community needs - or the degree to which these networks might become ‘tools’ for distributing economic and social assets based on nascent political affiliations.

**Project intervention**

The Project has addressed minority concerns within the framework of its mandate - ie employment creation within the horticultural sector. In many cases allowances had to be made for their particular situation – especially for Serbs. Some Serbian enclaves are still considered in the ‘emergency phase’ and continue to receive agriculture inputs as grants from Government and NGOs alike. The Project, therefore, waived its rule of the co-financing of trials that applied to other clients. Similarly other Serb clients benefited from Project collaboration even when, for security concerns, they were unable to attend training sessions – normally a pre-condition for receiving project support.

The Project became more active in working with Serb communities during the first quarter of 2004 since interethnic relationships were rapidly improving – especially regarding freedom of movement. These activities came to an abrupt halt, however, with the riots in March of that year.

The examples below present cases where minorities have been involved in project activities:

**Hoqa e Madhe Wine Growers Association, Rahovec**

Assistance was given to this association of 113 Serbs in 2001 in applying for KLIP funding (€28,650) for the provision of horticultural inputs and processing equipment. The Project (through the Horticultural Adviser) also provided them with technical advice. The association was able to market their produce through a network of churches.

**Vegetable Production with Ashkalia community, Xerxe, Rahovec**

Assistance was provided to 13 Ashkalia families in collaboration with Canadian KLIP in 2003. The community belongs to the poorest sector within the society and has been surviving without any income apart from social aid. Ten poly-houses were constructed, each of 100m², and seed and technical and marketing advice provided regarding vegetable production. While they continue to utilise the poly-houses provided, no signs are evident of any expansion of their operations – in contrast to other communities supported in the same area in similar agro-climatic conditions.

**Vegetable production with Turkish community in Mamusha, Prizren**

Project support to this community was similar to that of the Askalia community but the results were dramatically different. Three years after the project intervention started there has been an explosion of large poly-house construction and in investment in drip-irrigation and concentration on producing protected tomatoes for the early high-priced market.

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58 Also called Roma, Egyptians or Gypsies.
**Bedding plant and cut flower production with Serbian association, Lipjan**

Support was provided to the ‘Srpske Domacice Lypjana’ women’s association in Lipjan for bedding plant and cut flower production through technical advice, inputs and marketing promotion. The project staff only interacted with one of the families that was representing the association – for some reason other members were never able to meet together during staff visits. A visit to the family was organised in 2003 for two Albanian women from Decan who were willing to collaborate in bedding plant production.

**Bedding plant production, Zubin Potok, north Kosovo**

An activity was planned for 2004 in the Mitrovica area with a Serbian women’s group for growing bedding plants - and the Participatory Technology Agreement prepared. The activity was cancelled as a result of the March riots and the resulting deterioration in relations between the ethnic communities.

**Top fruit production with Serb, Shterpce**

The establishment of a 0.2 ha apple orchard was supported with a Serbian farmer in Shterpce in March 2004 through the provision of improved planting material and advice.

**Soft fruit production with Serbs in Gjilan**

Serbian farmers in the Gjilan area were identified in 2004 who were willing to collaborate in soft fruit production. This collaboration did not materialise, however, since the clients wanted the Project to take responsibility for marketing. Moreover, the troubles of March that year would have made such involvement impossible.

A further attempt was made in the autumn of 2005 within the scope of the scaling up of soft fruit. Two Serb farmers in Koretishte are being supported with planting material, concrete plant supports and advice to establish 0.2 ha each of raspberries. The two sites are now planted.

**Observations**

The majority of interventions reported above represent attempts at provoking practical changes in the welfare of minorities. Only in a few cases were explicit strategic changes sought (such as promoting the collaboration between Serb and Albanian clients in the Lipjan example). The Project is now starting to think how it might focus more in future on encouraging strategic change – especially through scaling up. Neighbouring Serb and Albanian villages, for instance, could be involved in joint promotion of raspberries and blackberries.

The Project has learnt to avoid promoting minorities out of the context of the overall project strategies. The supporting of an isolated apple producer just because he is a Serb (case of Shterpce) would be inconsistent with the present strategy of focusing attention of top-fruit development on those geographical areas identified by the Ministry and the Project as having the most potential for the purpose.
Annex L

**Assisted scaling up – apples and strawberries**

_The opportunity for outside intervention in scaling up_

Scaling up is the process whereby a successful value chain expands to benefit a greatly increased number of stakeholders. It also involves individual stakeholders expanding their own operations. It is expected that the quasi-totality of the scaling up will occur without outside intervention – with actors simply copying best practice. It is argued, however, that this process will be considerably speeded up by judicious outside intervention in its early stages. It is this speed of scaling up that is of critical importance for creating both the comparative advantage of Kosovo farmers and the maximum economic benefit to the community at large.

Two main processes of scaling up can be identified. The first involves individuals copying from a successful neighbour while the second happens when a new value chain is established at a site at a considerable distance from the pilot value chain.

Examples are presented below of two of the three largest project components - top fruit and soft fruit – both of which are ready for scaling up. The status of each value chain is described – and is followed by a presentation of the potential for outside intervention to speed up the subsequent scaling up.

**Top fruit**

_Value chain establishment:_ 14 demonstration orchards have been established throughout the country containing 64 new varieties of apple, pear, plum and cherry. The majority of the orchards were planted in 2003 and the first established is now three years old. They now constitute a major resource for publicising to stakeholders the opportunities that modern orchard production presents. In addition, three private nurseries are in operation that will produce 10,000 improved trees in Autumn 2005 and 150,000 the following year. The basis of the nurseries rests on their mother tree orchards, scion hedgerows and rootstock beds - all supplied from imported material.

Orchard techniques and materials introduced and adopted include intensive planting, pole and wire supports, modern pruning, drip irrigation and organic weed control (wooden chips). In addition, intercropping with strawberries for the first four years of orchard establishment is being developed in order to ease repayment of the credit.

_Value chain scaling up:_ Although the Project has received around 100 requests for support in establishing orchards, farmers remain reluctant to take this step by themselves. This situation is reflected in commercial orchards only representing 20% of the sales of improved trees from project-supported nurseries in 2004. The main factors appear to be (1) a lack of familiarity with modern varieties and methods of production, (2) uncertainty over the future profitability of the top fruit enterprise, and (3) the absence of a credit product suitable for financing such a long-term investment.

It is considered that the first years of scaling up require a push-start from development agencies in order to address the above concerns. This support will (1) overcome temporarily some of the constraints (through development subsidies for credit, for example), (2) allow time for the government and other stakeholders to put in place an enabling environment (eg horticultural policy and regulations, credit products) and (3) establish a large number of successful examples of profitable orchards based on modern planting techniques.

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59 Extract of _Value chain establishment to scaling up – the new challenge for SPHP-K_, June 2005.
A support package from the Project for establishing orchards would have two interdependent parts. The technical sub-package would include advice from a service provider supported by the Project and the development of the orchardist’s links to other actors in the value chain (eg input suppliers). The financial sub-package would involve the establishment of a business plan, the provision of an appropriate credit product by a credit institution, the commitment of the client to follow the recommended modern techniques and embedding part of the service provider’s costs in the loan agreement.

Role of a development agency: The credit would be provided by a commercial credit institution. The latter would be encouraged to establish an ‘orchard establishment credit product’ through the financial support of a donor in risk-sharing. The ultimate objective would be that, after a few years of such promotion, certain banks would be confident enough in such investments to provide the ‘orchard establishment’ product without further donor assistance. Key characteristics of such a product would include a six-year maturity, two-year grace period and an interest rate below the current 12%.

Rate of scaling up: Technical and organisational factors suggest that the rate of scaling up over the next three years could be as follows:

**Autumn 2005:** 10 ha of top fruit orchards - utilising the totality of the improved planting material available from in-country nurseries. This could be done without the availability of a credit product by including only clients already having access to funding. This ‘pilot year’ would be utilised to test and refine the promotion package.

**Autumn 2006:** 60 ha - assuming the availability of a credit product.

Financial implications of scaling up:
The additional ‘other fiduciary funds’ estimated to be necessary in scaling up orchard establishment are presented in the following table. It is seen that an additional investment of € 330,000 by SDC would leverage a cumulative net cash flow (not discounted) over the life of the orchards (25 years) of over € 7M – and help create 42 full-time jobs each year for next 25 years.

<table>
<thead>
<tr>
<th>Support for 1 ha apple orchard establishment - €</th>
<th>yr 0</th>
<th>yr 1</th>
<th>yr 2</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support to credit institution = 25% of loan</td>
<td>2,500</td>
<td></td>
<td></td>
<td>2,500</td>
</tr>
<tr>
<td>Service provider</td>
<td>200</td>
<td>300</td>
<td>150</td>
<td>650</td>
</tr>
<tr>
<td>Hole making</td>
<td>1,044</td>
<td></td>
<td></td>
<td>1,044</td>
</tr>
<tr>
<td><strong>total</strong></td>
<td>4,194</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Implications on wider programme**

<table>
<thead>
<tr>
<th>Ha of orchard established &amp; a/m of project support - €:</th>
<th>ha</th>
<th>€</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005:</td>
<td>10</td>
<td>16,940</td>
</tr>
<tr>
<td>2006:</td>
<td>60</td>
<td>251,640</td>
</tr>
<tr>
<td><strong>total</strong></td>
<td>70</td>
<td>268,580</td>
</tr>
</tbody>
</table>

| Full years of employment created per year | 70 | 42 |
| Net cash flow per year once orchards in full production (from yr 5) | 70 | 407,000 |
| Net benefit per year - including value of on-farm labour (from yr 5) | 70 | 870,000 |
| Cumulative net cash flow over life of crop (x interest) | 70 | 7,200,000 |

**Notes:** no credit would be utilised in 2005

Total investment cost in yrs 0 & 1 = € 13,808 (excl family labour). Assume credit needed is € 10,000.

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The current draft business plans would be finalised once yield measurements of the 2005 harvest are taken.
**Soft fruit (strawberries)**

Discussion is limited to Strawberries since the other soft fruit – raspberries and blackberries – are not yet ready for scaling up. The scaling up of strawberries already commenced on one site in 2004 (Debellde, Viti Municipality) and the experience gained has guided the current proposals.

**Value chain establishment:** Two private nurseries are currently in operation and produced 80,000 strawberry plants in 2004 from imported planting material. 90,000 first generation and 150,000 second generation plants will be available for Autumn planting in 2005 – sufficient for 5 ha.

Six new varieties have been tested since 2002 and market presence extended over 3 months from April to July. Records indicate an average yield over the 3-yr life of the crop of between 15-22 t/ha – representing a 30% increase over previously grown varieties. Techniques introduced and adopted have included ground cover (for weed control), fleece (for frost protection), poly-tunnels (for early production) and drip- and ferti-irrigation systems. The new materials are now available through traders in Kosovo.

33 producers, supported by the Project, produced and sold 85 t of strawberries in 2004 (from 7.7 ha) representing 15% of the national market. 730 kg of jam was processed and sold.

**Scaling up:** Two-year promotion packages are proposed for introducing strawberry production, processing and marketing to new sites. Further scaling up within such sites is expected to occur without outside intervention. Five producers would be supported in the first year, each with 0.2 ha. The Project would contribute advice and would finance 100% of the planting material and 50% of packaging, plastic mulch and fleece and provide links to the market. A reduced level of support would be provided to farmers joining in the second year and none in the third year apart from advice.

The above support would be given through private service providers (SPs) who, in turn, would be supported by the Project. It is projected that, with this two-year support, the area cultivated by the sixth year at a given site would amount to 9 ha and involve a total of 15 producers.

Consideration would be given to the appropriateness of small-scale credit – but this may well not be necessary as the returns from cultivation are rapid.

The number of sites promoted would be determined by the budget available.

**Financial implications of scaling up:**

Scaling up with 4 sites in 2005 and a further 8 in 2006 would involve an additional project cost of € 80,000. This would lead to the creation of 18 full-time jobs by the third year with a total added value of € 390,000. More importantly, the promotion of the 48 ha involved over 12 sites throughout Kosovo would provide clear examples for other farmers to follow without further external assistance. The net returns to be expected from the cultivation of 1 ha of strawberries over three years amount to € 10,800 (without outside support).

A summary of the findings are presented in the following table while more detail is provided in Annex 2.
<table>
<thead>
<tr>
<th></th>
<th>yr 1</th>
<th>yr 2</th>
<th>yr 3</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nb of scaling up sites commenced</td>
<td>4</td>
<td>8</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td>Nb of producers involved</td>
<td>20</td>
<td>80</td>
<td>140</td>
<td>140</td>
</tr>
<tr>
<td>Area cultivated – ha (for 3-yr crop)</td>
<td>4</td>
<td>20</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Total production – t</td>
<td>33</td>
<td>192</td>
<td>519</td>
<td>744</td>
</tr>
<tr>
<td>On-farm employment created – yrs</td>
<td>1</td>
<td>7</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Value on-farm employment created - €</td>
<td>5,267</td>
<td>26,333</td>
<td>63,200</td>
<td>94,800</td>
</tr>
<tr>
<td>Total net income generated - €</td>
<td>13,995</td>
<td>78,667</td>
<td>204,047</td>
<td>296,709</td>
</tr>
<tr>
<td>Total value created - €</td>
<td>19,262</td>
<td>105,000</td>
<td>267,247</td>
<td>391,509</td>
</tr>
<tr>
<td>Additional project support required</td>
<td>16,647</td>
<td>42,632</td>
<td>19,874</td>
<td>79,153</td>
</tr>
</tbody>
</table>

**Return component:**

20% of the project support in any one site is allocated to financing the totality of the planting material in the first year – using first generation plants from the nurseries. First year clients, however, will repay this funding at the end of the season by ‘returning’ 5 plants to the Project for every plant received. These returned plants would be subsequently allocated to new clients at no further cost.

**Note:** This paper is written at an early stage of a review of SPHP-K strategies and is based on the following draft documents:

- **SPHP-K strategies,** 26 May 2005, 7 pp, (general and cross-cutting strategies covering VCE, scaling up, choice of clients, support to clients, gender, minorities, poverty)
- **Elements for a national top fruit strategy,** 3 pp, 3 May 2005
- **SPHP-K top fruit strategy,** 5 pp, 3 June 2005
- **SPHP-K soft fruit strategy,** 7 pp, 6 June 2005
Contents of

Acronyms and glossary
Map of SPHP-K clients
Summary
1. Context … … … 1
2. History and management … … … 3
3. General strategies … … … 10
4. Input supply and production strategies … … … 20
5. Post-harvest and marketing strategies … … … 27
6. Strategy 2005/6 and progress … … … 31
7. Results and potential impact … … … 35
8. Future perspectives … … … 39

ANNEXES
  A: Documentation … … … 1
  B: Goal and objectives … … … 3
  C: Vegetables … … … 7
  D: Soft fruit … … … 23
  E: Top fruit … … … 29
  F: Ornamentals … … … 35
  G: Herbs & teas … … … 41
  H: Integrated production … … … 45
  I: Post-harvest … … … 47
  J: Marketing … … … 51
  K: Gender & minorities … … … 60
  L: Partnerships … … … 65
  M: Project publications … … … 69
  N: Media … … … 70
  O: Staff Training … … … 72
  P: Machinery … … … 76
  Q: Participatory Technology Agreements … … … 80
  R: Assisted scaling up - apples and strawberries … … … 85
  S: Timeline … … … 89
  T: List of clients … … … 95