

HPK INTERVENTION REPORT

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DEVELOPMENT OF A COMPETITIVE APPLE VALUE CHAIN IN KOSOVO



1. Background

HPK has promoted the apple sub-sector because of its income and employment potential. The high demand for apples in Kosovo drives the opportunity for small scale farmers. 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 the pre-war commercial industry was established in 1957 with the introduction of new varieties and cultivation techniques, and by 1984 over 12,000 ha were in production – of which 84% were privately owned.

However, by 2001, as a result of the war commercial apple orchards and all the processing factories had been either destroyed or closed. The Peja Institute responsible for producing planting material had effectively stopped working. The

market was dominated by imports of fruit and of poor quality planting material from neighbouring countries. Local production was of a very low quantity and quality, and was predominantly based on subsistence farming.

From 2006 onwards, the horticulture sector started showing signs of recovery with new private sector companies entered, including processors, traders, and retailers. These dynamics also applied to the apple sub-sector in particular. While production was still rather low, additional bottlenecks emerged such as missing linkages along the value chain, storage capacity, and weak public policies.

This report discusses the early activities and intervention of HPK, but focuses on the results achieved in the final phase of the project, largely as a result of these earlier interventions.

2. Vision & Strategy

The vision of HPK was to see a viable local apple industry producing new varieties of apples, under production systems that incorporated modern growing techniques that were commercially viable. This would result in apples of a quality and quantity that could replace imported products, as well as take advantage of export opportunities.

Projects interventions in the apple sector saw two phases (although some activities crossed both phases). The period from 2001 to 2007 saw the introduction of new varieties and technologies,

promote production by private actors (individual producers and groups) and re-building a viable nursery sector. From 2007 to 2010, the focus shifted to scaling up commercial production by increased direct investment and promotion, as well as tackling the missing supporting functions for the market system.

3. Interventions

3.1 New varieties and demonstration plots

Between 2002 and 2005, ten orchards covering 6.91 ha were established to test and demonstrate a range of varieties and cultivation techniques. In addition, two variety collection orchards have been established in Istog and Kamenica municipalities containing between them 29 varieties of apple and five different rootstocks.

In 2001 no reliable and certified planting material was available in Kosovo, so the first planting material was imported from neighbouring countries by the Project. 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.

3.2 Support to Nurseries

As noted above, after the war there was no local capacity for producing planting material in Kosovo, and trees for the first demonstration orchards needed to be imported from neighbouring countries.

VEGETATIVE VS. GENERATIVE ROOTSTOCKS

■ Vegetative rootstocks are produced vegetatively from suckers (as opposed to generative or seed grown rootstocks) and, once grafted with scion material, produce trees of a specified vigour and size (normally of low vigour and reduced size). This leads 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.

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

Year	Orchards	Introduced technology
2002	1	12 apple varieties; irrigation & fertigation system; organic mulch; support system; modern pruning; M27, M9, M26 rootstocks
2003	4	17 apple varieties; support system; modern pruning; M27, M9, M26 rootstocks
2004	4	More vigorous rootstock MM111; autumn planting; high altitude for imported varieties
2005	1	More vigorous rootstock M106

Table 1: Sdemonstration orchards supported by HPK

while such production in the public sector had ceased. These nurseries are supported by two mother orchards established in 2003 29 varieties of apples.

6 fruit tree nurseries have been directly supported through HPK, Nursery and input sector delivering good services and increasingly commercially viable

3.3 Scaling up

In 2003 – 2004 the demonstration orchards were established with new varieties. Some were planted for the first time in Kosovo and tested in Kosovo agricultural condition. 5 ha of orchard were established in 2005, then in 2006 50 ha were established in 6 municipalities with co-financing.

In 3 orchards the protection system from hail was established.

Further scaling up was undertaken in 2008 in four municipalities, i.e. Viti, Ferizaj, Istog and Klina. Viti and Ferizaj have financially supported this venture with 20% of the cost of the trees. Istog and Klina municipalities were involved institutionally by participating in the whole of the selection process.

3.4 Growing Techniques

Various modern techniques have been tested in the demonstration orchards. Most orchards have been planted as semi-intensive (1,000 trees/ha) but up to 2,300 trees/ha 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.

HERITAGE APPLES



■ HPK helped safeguard the genetic diversity of heritage apples that are threatened with extinction. Heritage apple varieties may be used for cultural, economic or scientific purposes (they could be potential sources of natural pest and disease resistance in the future) and HPK considers them an important resource.

A local consultant was engaged to identify the location of such old fruit trees and identify the varieties. Ten local apple varieties and three pear varieties have been identified and 24 marked. The consultant has also provided training in basic tree management to the owners since most of these trees were on private land and poorly managed.

Laboratory analyses in Italy indicated no presence of any of 3 main apple viruses, and project-supported nurseries volunteered to produce new trees from bud and graft wood taken on both generative and vegetative rootstocks from the identified trees. 300 trees were grafted during 2007, and the nurseries are going to maintain their own propagation stock so that these varieties would be available for sale.

3.5 Integrated Production

HPK has been motivated to increase the productivity, quality and continuity through promotion of integrated production in fruits. The first intervention started in 2008 with establishment of the technical working group with aiming to produce key documents for implementation of apple IP (technical guidelines, green and yellow list, etc).

HPK has supported farmers with inputs such as: pheromones, bio pesticides and new techniques such as pest and diseases monitoring. Also the project has supported the links between farmers and advisors initially by financially supporting them 100% and then reducing gradually to 50% financially support in 2012.

3.6 Developing an Advisory Service

With the basis of an apple production industry taking shape, HPK began developing advisory services in 2007. This was initially a group of service providers engaged by HPK to support demonstration orchards and the scaling up of new orchards.

On 2010, 33 days of theoretical and practical training was provided for the service providers by regional experts (from Albania) on plant protection while local input suppliers were used for training on plant feeding and top dressing of fertilizers.

After this initial intensive training was completed, further training was provided for specific topics, such as IP, fire blight and quality standards.

3.7 Apple Storage

Storage of apples to take advantage of improved market conditions outside of the main growing period is practiced in all apple growing countries.

A strategy of 'on-farm storage' was developed by HPK, to cater for the smaller quantities of fruit produced by each grower, to utilise existing buildings and to demonstrate the advantages of correctly storing apples for later marketing.

With the aim of demonstrating the commercial viability of these smaller storages, a cost benefit analysis for storage of up to 60 tonnes was undertaken by the project. Support was given in 2008 to establish an apple store with one member of each of the two most promising apple associations "Fruti" (Gjilan) and "California" (Viti). Both stores were fitted with automatic temperature and humidity regulation and were financed under a cost sharing agreement between HPK, the associations and the participating farmer. A further 8 stores were completed between 2009 and 2010 under a range of financing models.

However, due to poor a combination of reasons, these stores generally failed to achieve the desired results. Based on this, the strategy of HPK changed in late 2010 to only supporting larger, commercial apple storages, able to store produce on a commercial fee paying basis for small farmers. Through direct project funds and the Competitive Fund for Horticulture, HPK supported 3 commercial storages for apples.

4. Results

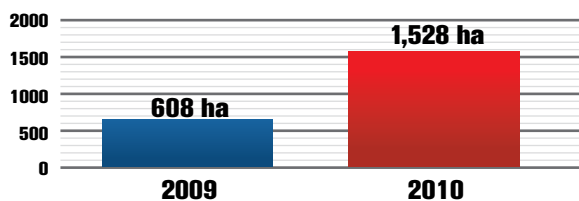
4.1 Expansion of Orchards

Big companies that have privatized former state own land, are increasing production capacities of apples.

Around 100 ha of fruits are planted every year, from them 30-40 ha are half commercial and commercial and around 60ha are subsistence orchards. This calculation is made based on the number of shoots produced in Kosovo, imported seedlings and raised surfaces with tree (apple trees and soft fruit) based on MAFRD.

The area of apples in 2005 was 608 ha by increasing in 2011 in 1,528 ha.

Are of apple during 2005-2011



4.2 Production of Saplings

By 2011 222,000 apple saplings on vegetative rootstock have been propagated out of no commercial production in 2001. Six direct Project beneficiaries and three replicators contributed to this achievement. The market of quality saplings is well established ensuring the sustainability after the project termination. Identification of constrains and opportunities existing in the subsector in general.

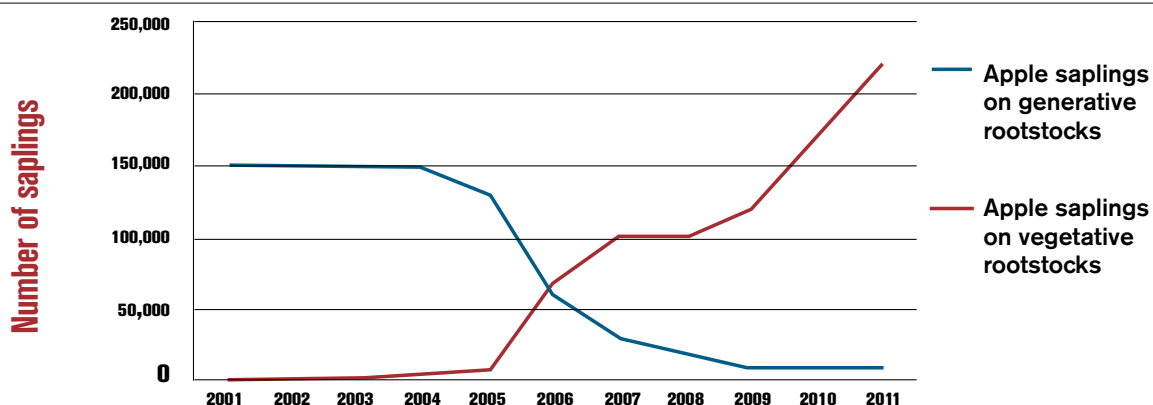
The plants (saplings) sold during the 2011 season by farmers supported from HPK generated 332,975 € of revenue. Compared to 3 years before, the sales were more than 42% more

4.3 Increased Adoption IP

The number of farmers implementing IP principles increase from no farmer in 2005 to 134 farmers in 2011.

Apple farmers increased the area under IP cultivation from 50% to 75% between 2010 and 2011, and despite having considerable younger orchards than other farmers. Through implementation of Integrated Production the use of pesticides is reduce for 5 times (from 15 users in 2001 to max 3 users in 2011). This had impact in improvement of product quality, protection of the environment and social health.

Switch-over from generative rootstocks use onto vegetative rootstocks



5. Lessons Learnt and Conclusion

In 2001, HPK identified the apple sector as one of the main sectors to promote employment and income in rural Kosovo. The strong results shown in this report reflect the approach taken by HPK, namely that re-establishment of a sector requires a number of different interventions throughout the value chain, but that also sustainable change requires a long period of time.

HPK has intervened very little in the last 2 years in the apple sector, with only some investments through the CFH and continued support to advisory services, yet the nursery sector continues to expand, new orchards are being planted and marketing initiatives are being promoted by the sector's actors - and this indicates a sustainable industry is now present in Kosovo.

Despite this success, imported products still dominate the market in Kosovo, with more than €3.5 million in imports in 2011 yet only €65,000 exported.

The issue of apple storage also remains unfinished. HPK initially promoted on-farm storage as a suitable option for Kosovo producers to extend their marketing window. However, despite this showing potential in cost-benefit analyses, and with the exception on 2 examples, on-farm storage has shown to be ineffective so far, with commercial storages likely to be more viable for extended marketing of local produce.

This is also linked to the challenges facing producers in improving quality and packaging. Part of the problem remains a lack of knowledge at the producer level, but also mixed messages coming from the markets does not encourage consistent quality standards. As production volumes increase rapidly in the coming seasons, this is likely to become a key issue for the sector though.

The early focus of HPK on improving the production base allowed for these alter market initiatives to take place. Despite some criticism of the number of varieties introduced, and the strong focus on project-led interventions, the overall success of the program shows this was still the correct approach.

The sector still faces many challenges, from imported products to a lack of proper certification schemes for planting material. A lack of formal business and marketing strategies for the sector will also need to be addressed. There is a lack of knowledge on what farm size is required to be sustainable in the long term, and there will need to be some rationalisation of farm ownership in the coming few years. However, the apple sector is one that has benefitted greatly from HPK's interventions, and is poised to achieve excellent success in coming seasons.



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Implemented by:



HELVETAS
Swiss Intercooperation

KOSOVO

HPK
HORTICULTURAL PROMOTION
IN KOSOVO

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