

Apple Project India

(Phase wise/ year wise progress report)

It is a joint initiative of Fresh food Technology (FFT), Stichting Het Groene woudt (SHGW) and Shri Jagdamba Samiti (SJS).

Phase I: Commodity Assessment & Selection of areas:

The selection of the locations were made, based on the apple production by small and marginal farmers in Nagaon and Tyuni area of Utrakhand. For each location, an inventory was made of the number of apple trees, average yield and average size of the orchard. The proposal included the construction of joint apple collection points in strategic locations, where apple growers could bring their produce and where apples could be graded, sorted, packed and possibly pre-cooled. Afterwards, they could arrange transport to bring larger volumes to markets where the apples could be sold directly without interference of middle men. Moreover, farmers were organized in formal groups and that they obtained sufficient training for improvement of orchard management and quality of yield. Selection of two locations at Pision and Dhari has been done in the year 2007 and the other two locations i.e. Purola and Tyuni has been finalized in the year 2008.

Outcome: Farmers were organized in formal associations/ farmer trusts and a joint company of farmer trust and FFT was made to jointly grade, sort, pack and sell their apples. At the same time, technical assistance on orchard management (from pruning, soil management, picking methods etc) greatly helped to improve both the quality and quantity of their yield. So far more than 3500 farmers selected in these four locations.

Phase II: Feasibility study:

After selection of areas and farmers for setting up collection points at different locations in Utrakhand, FFT conducted a feasibility study on a Long Term Storage facility for apples. Generally apples were collected from the orchards and directly sent to the market. Since the farmers are situated high in Himalayan Mountains a good cold store for apples is hard to find. Furthermore the picking season overlaps with the rainy season, which means that a lot of apples never reach the markets due to bad road conditions. The storage of apples close to the farmers will also greatly reduce the losses incurred due to bad road conditions.

To store the apples for a longer period a normal cold store will not suffice. Controlled Atmosphere (CA) storage is required. Under CA conditions the oxygen and CO₂ levels in the air are controlled, which can effectively put apples to sleep. The best partner for this technology was identified and incorporated in a plan that also included state of the art cooling and sorting equipments. These technologies combined with a sound market study resulted in a feasibility study on the Long Term Storage Facility. Apart from CA technology for storage, a series of training on timely picking and handling of apples, given to farmers through collection point companies. A feasibility of collection points near production area was the part of long term storage.

Outcome: Once sufficient farmer groups have organized themselves and the supply of good quality apples from them was confirmed, a plan has been drawn to build a long-term storage facility with controlled atmosphere technology to sell the apples off-season and compete effectively with the highly prized import apples. After successful operation of collection points in 2008 and 2009 preparation for setting up Long Term Facility has been done in 2010 and a Controlled Atmosphere storage of 1000 MT capacity set up in 2011.

Phase III: Funding

Based on the commodity assessment, a funding proposal was developed with the help of Shri Jagdamba Samiti and participating farmers organisation namely “Purola Netwar Sev Utpadak Krishak Sanghran Avan Bipanan Kalyan Trust”, Bavar Silgaon Sev Utpadak Krishak Sanghran Avan Bipanan Kalyan Trust , Dhari Kafnol Silgaon Sev Utpadak Krishak Sanghran Avan Bipanan Kalyan Trust , Syuri Nagaon Sev Utpadak Krishak Sanghran Avan Bipanan Kalyan Trust , to set up a pilot project in four locations.

A proposal was made and presented to social investor (SHGW) and banks to invest for constructing construction center and a Long Term Storage Facility (LTF) for apples. The LTF facility would be situated in the heart of the apple growing region which was earlier incorporated in the collection point project. The LTF facility would use Controlled Atmosphere technology and a state of the art sorting machine.

The Govt of India through National Horticulture board (NHB) extended their support by offering different subsidies on importing CA Technology and other technical equipments, under the package for growth scheme for the small and marginal apple farmers of India.

Outcome: The bankable proposal demonstrated the economic viability of this venture and was submitted to private social investors for their support. Sufficient funds were mobilized to set-up four, fully equipped and operational collection points over the period 2007 – 2009. SHGW has given financial support for infrastructure building and organization development as mix of investment loan and grant.

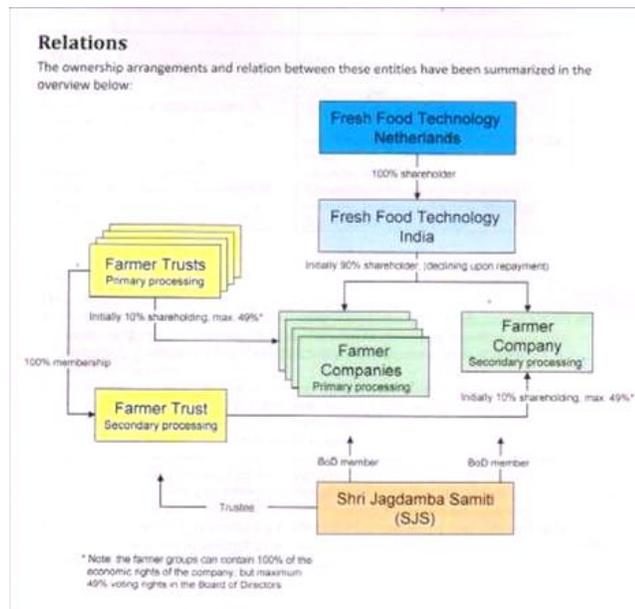
Phase IV: Organisation

Eventually, As per the apple project model, the project partner, SJS and FFT were to set-up farmer-owned companies, which were eager to play a leading role in implementing the project. In working out the organisational model and legal arrangements, due attention was paid to the question: how could full economic ownership of the apple collection points, be transferred to farmer groups? Since these groups are to repay the investment made in infrastructure and hardware, once they have been able to run the business in a profitable manner, the legal arrangements should enable such ownership transfer. At the same time, the project partner were very cautious not to create ineffective cooperatives, where short-term economic and political interest prevail over the long-term economic viability of the company.

To achieve the above at same time four joint venture companies named Dhari Kafnol Farmer Agro Processing and Marketing Pvt Ltd , Bavar Silgaon Farmer Agro Processing and Marketing Pvt Ltd, Syuri Nagaon Fruit Collection Pvt Ltd, Purola Netwar Farm Collective Pvt Ltd and for long term storage facility , FFT set up a joint venture company through her daughter company FFTI together with SJS and the farmer trust, namely Fresh Food Technology Himalya Fresh Produce (FFTH) Ltd.

FFT and SJS when needed advises FFTH on the running and operation of the facility. The farmers are also share holder in FFTH and will eventually own the complete economic rights to FFTH.

Outcome: For the existing four apple collection points, over 3500 farmers participate through their associations and/or trusts, which in turn are shareholder in a private limited which trades the apples.



Phase V: Engineering and Design

To ensure sufficient daily capacity of the sorting and grading, all the collection centers have been equipped with sorting and grading equipments, as well as pre-cooling chamber, which has been designed and engineered by FFT.

Along with this a pre-cooling unit was installed which matched the expected daily capacity of A-grade apples. Pre-cooling of apples become important for the farmer groups who wish to keep their produce to long-term storage facilities.

Long Term Facility with controlled atmosphere technology had also started taking shape. The design of the building was also very important since the cold store had to be gas tight, which puts special demands on the building design. A separate high capacity computer controlled sorting line had to be installed. The flooring, steel structure and panels had to be of very high quality. The building would be situated in the earthquake prone Himalayas, so this had to be incorporated in the design.

Outcome: All four apple collection points have been equipped with one sorting and grading container and one pre-cooling container each. All the equipments were transported to the remote locations in the Himalayan mountains and are operational since July 2008. Farmers have successfully trained on the use of the equipment to jointly purchase, sort, grade, pack and pre-cool their apples.

For Long Term Storage Facility, architectural drawing completed and “van Amerongen CA Technology” design has been selected based on the 1000 MT cold storage.

Phase VI: Construction and Installation

Suitable lands have been identified with the help of participating farmer trusts for the construction of apple collection points at all the four locations of Uttrakhand. Farmer groups have taken a leading role for selecting land respectively in consultation with the project partner Shri Jagdamba Samiti, who has guided and provided them all round of technical supports.

Construction process, has been started soon after acquiring land. Upon completion of construction all the required equipments i.e. sorting, grading pre-cooling chamber has also been installed.

Construction for long term storage facility has also started gradually after finalizing the designing. Materials were brought to the project site in 40 ft containers, but because of the especially devastating rainy season of 2010 they could not be brought up. All the materials had to be unloaded and transferred to small lorries, which did the last leg of the journey. Shri Jagdamba Samiti and FFT supervised the construction phase to ensure continuity and quality. After completing the concrete flooring, the panel builders started building the cold stores. IVL BV and Van Amerongen CA Technology started their work once the rooms were finished. Everything was made gastight and trial runs were performed. Finally Greefa BV installed their sorting machine, which has the capability to sort on apple size, weight and colour. To ensure a constant power supply a generator-set was brought in and installed onsite in a special soundproof building.

Outcome: All four apple collection points have been designed, constructed and equipped with a sorting and grading container and a pre-cooling container each. All four apple collection points under the guidance of Shri Jagdamba Samiti have been operational since July 2008. Farmers have successfully used the equipment and collection point to jointly purchase, sort, grade, pack and pre-cool their apples, while selling them off against better prices and better margins. The net income of farmers for the apples sold through these centres, was on the average 10 to 20% more than the income obtained from apples sold through regular channels. Time to time Shri Jagdamba Samiti also provide training on advance apple farming and maintaining to the apple orchards.

Long Term Storage Building started in March 2011 and was finished on September 2011. Shri Jagdamba Samiti played an important role by coordinating different stakeholders for the smooth completion of LTF. A state of art controlled atmosphere long term storage of 1000MT apple sorting capacity is now ready to operate at village Kotiyal Gaon (Nagaon) in Uttrakhand.

Phase VII : Operation and Management

At the operation level, Shri Jagdamba Samiti, is providing backstopping services to farmer groups on a daily basis on the other hand FFT is providing strategic and operational guidance. A critical decision which the farmers have to make annually, is to determine an appropriate purchase price at the centre for the apples to be procured and processed. Formula's are agreed upon how to determine the price level on a daily basis. From these prices the normal cost for transport, labour, packaging, handling, etc. are deducted, leaving a transparent, agreeable price built-up for the farmers. To assist the management of the apple collection points in predicting whether the projected level of apple procurement, value-addition and expenditure will result in a profitable season, Shri Jagdamba Samiti and FFT developed a simple financial quick scan as tool for the management to predict the losses or profit. This scan helps the farmer companies to plan their business in advance (prior to the season) and to monitor the impact of price adjustments during the season. The scan was especially developed to judge at what price level apples can be purchased and still make profit. Since price fluctuations occur daily, this automated financial quick scan was developed. In addition, FFT along with SJS and elected farmer representatives, participates in the annual board meetings of the apple collection points, where (financial) progress is evaluated and priorities for the upcoming year are determined.

Outcome: As of 2008, the farmers groups themselves have increasingly taken on the responsibility for the daily management of the apple collection points. During 2009, even the financial monitoring and administration was mainly done by the farmers themselves. The Financial Quick Scan has been used since 2008 to plan and monitor their income projections. This has lead to more conscious purchasing decisions. Also a weekly reporting system has been instituted during the apple harvesting, through which the farmers, as well as SJS and FFT, have immediate insight into the financial performance. For LTF the same arrangements has been developed with management of FFT Himalyan Farm Fresh.

ICT also played an important role in Apple Project. As this project comprises of different stakeholders. Each and every stakeholder has an equal importance in the model, this includes small and marginal farmers to farmer trusts, management team, funding agencies etc. Thus, ICT identified the different stakeholders involved in this project and integrated them with the ICT work flow structures.

ICT initially started working with this project - by establishing link between small producers of various villages to the nearest village center office(s) and different village center offices to the nearest collection center office(s), finally from different collection center offices to the Head Office and the C. A. (Controlled Atmosphere) store. Different project has been implemented by the ICT team of Shri Jagdamba Samiti. These includes Farmers' Database Management Information System, M.I.S. on planning and target of Apple collection prior to apple season, Purchasing Apples from the farmers, Processing flow and Inventory

Management, M.I.S. on Ownership transfer and profit Distribution to the farmers etc.

Phase VIII: Transfer of economic ownership for farmer owned value chain business

All legal arrangements have been made to allow for a smooth transfer of the economic ownership of the apple collection points to the farmer groups. The ownership presently lies with companies, registered as private limited's, in which both the farmer groups through their trusts or associations are shareholder along with the 100% Indian subsidiary of and FFT. Annually, upon repayment of part of the investment (e.g. upon receipt of eligible subsidies or repayments from profit made), the shareholding is adjusted in favor of the farmer groups. Shri Jagadamba Samiti is facilitating the repayment and transfer process between farmer trust and FFT India.

Outcome: All legal arrangements are in place. Five private Ltds. are formed as joint venture between the farmer groups and FFT India Ltd.

Step Forward:

At this stage (2011) repayments will start from JV's and project partners looking forward for more guidance from social investor (SHGW) to lead for a "Self perpetuating model" of small farmers' owned value chains.