



SUSTAINABILITY FOR CHINA'S APPLE INDUSTRY AND FARMING COMMUNITY

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THE VISION

“For China to be strong, agriculture must be strong. For China to be beautiful, the countryside must be beautiful. For China to be rich, farmers must be rich.”

- President Xi Jinping



“Rural poverty is not a problem of peasants. It is due to a lack of synergistic development and coordination among agricultural, commercial, and technological societies. Once the development paradigm changes, it will only be a matter of time before the rural-urban divide will be mended.”

- Jack Ma

EXECUTIVE SUMMARY (1/2)

- Agriculture forms the backbone of many developing countries but it is often the most disadvantaged sector in society. Ensuring a country's farmers are well integrated into the food value chain, have access to finance, training and education, and maintain good health and wellbeing, are key to lifting the millions out of poverty.
- China has 230 million smallholder farming households and is the world's largest producer, importer and consumer of food. Recent government policy has stated that rural revitalisation is the top priority for China's development. At the same time, the government is focused on making sure that food is produced in a manner that is safe and with as little environmental impact as possible.
- GIFT partnered with Austria Juice to create a business plan that would help the company source sustainably-produced apples for their apple juice concentrate (AJC) production in Xianyang.
- **Austria Juice** is a world leading fruit juice concentrate producer and beverage solutions provider. Among its 15 production facilities across the world, Austria Juice owns an AJC processing facility in Xianyang, Shaanxi, China, with a maximum capacity of processing 80 tonnes of apples per hour and 30,000 tonnes of AJC per year.
- Xianyang in Shaanxi province produces 1/9 of all apples in China and 1/6 of all apple juice concentrate in the world. It is also a major agricultural region producing large volumes of fruit, vegetables and meat. In recent years, the price of AJC has dropped to very low levels and this has driven many farmers to turn to producing fresh market apples for a higher price. However, fresh market apples are labour intensive and the market highly competitive. For many farmers whose trees are nearing an old age of 20-30 years, it is sometimes more practical to cut them down and grow other crops.
- GIFT recommended that Austria Juice work with Puhon Cooperative in this endeavour. **Puhon Cooperative** is a leading multi-functional farming cooperative in Yongji, Shanxi, with 20 years of experience in organising farmers and providing services to support ecological farming and community living among its 3800 members. Puhon promotes the usage of organic fertilisers produced from plant residue, enzymes from fruit and animal manure, and crop diversification to protect farmers from market volatility. It also provides education for kids, elderly care, and community services and training that create value for those living in the countryside. Puhon's model could pave the way for a viable solution for Austria Juice and presents a good example for other communities to emulate.

EXECUTIVE SUMMARY (2/2)

- The proposed business model suggests a 20-year cooperation between Austria Juice and Puhan Cooperative. It aims to help Austria Juice secure a stable supply of apples that are produced with a focus on environmental protection and social impact that responds to the challenges of smallholder farming in China. Through the cooperation and by scaling Puhan's cooperative model it also helps to connect smallholder farmers to a modern value chain thus providing them with a stable income and healthy community living in Xianyang and Yongji. The plan involves two phases of cooperation between Austria Juice and Puhan Cooperative.
- In Phase One, Puhan will sequentially reserve 13,000 mu of land dedicated to industrial apple production that is beneficial for the environment and community. It includes farming methods that reduce chemical inputs and plastic waste, and provides community services such as training, education and elderly care. Austria Juice will purchase all apples at a premium price that is based on a weighted average of industrial and fresh market prices to incentivise farmers.
- It is estimated that Puhan would require RMB 106,664,525 in microcredit financing to establish the 13,000mu required for intensive industrial apple farming. The plan suggests Austria Juice to contribute to a microfinancing fund for farmers and provide advanced payment to secure supply. The contract will generate a revenue of 169 million and net income of 3 million for Puhan in year 10.
- The plan also recommends that training services for industrial apple production and a traceability infrastructure be designed jointly by Austria Juice and Puhan.
- In Phase Two, it is suggested that a new joint-venture company, **Sustainapples**, be established to oversee the establishment of a Xianyang Cooperative based on the Puhan model, and pilot a distributed AJC and NFC (not from concentrate) plant in Puhan which will minimise transportation, create jobs locally, and open up new markets for Austria Juice.
- Sustainapples aims to draw young people back to rural communities and help Xianyang and Yongji farmers improve their farming practices. Through the venture Austria Juice can also ensure that new sources from the Xianyang Cooperative are produced under the same sustainability standards.
- By integrating farmers with the modern value chain, it is expected that this cooperation will raise living standards for smallholder farms in Yongji, Xianyang and beyond. It satisfies China's commitment to developing the countryside, and fulfills many of the United Nation's Sustainable Development Goals (SDGs) such as reducing poverty, providing gainful employment, preventing land degradation and protecting the planet. Developing traceable and sustainable produce will also help Austria Juice become more competitive, thus providing safer and better quality beverages for consumers around the world.



INTRODUCTION & BACKGROUND

GLOBAL LEADERS PROGRAMME



- **The Global Institute For Tomorrow (GIFT)** is an independent pan-Asian think tank providing content-rich and intellectually challenging executive education from an Asian worldview.
- **The Global Leaders Programme (GLP)** is GIFT's flagship leadership experiential learning programme designed for high potential managers from leading global companies and organisations to think critically about the drivers of change in the 21st century and develop new business models that address the defining challenges of our times.

PROJECT TEAM

- A cohort of 24 participants from 13 companies representing 12 countries joined the 60th GLP in Hong Kong, Xianyang and Yongji, China from 22 October - 2 November 2018. The cohort convened in Hong Kong from 22 – 26 October for classroom sessions, followed by site visits and business planning sessions in Xianyang and Yongji from 27 October – 2 November.
- In partnership with Austria Juice and Puhan Cooperative, participants produced a business plan for integrating smallholder farmers into the modern apple juice value chain and providing a stable supply of sustainably-produced industrial apples for Austria Juice.



**AUSTRIA
JUICE**



BASF
We create chemistry

NEC

iDSMED



ORIX

sojitz

ROBECO
The Investment Engineers

DBS



DFSA
Dubai Financial
Services Authority

PRUDENTIAL

Team of international executives propose a plan for sustainable apple production and value chain integration

SCOPE OF PROJECT (1/2)

Programme Objectives

- Explore and gain deeper insights into rural China and the apple industry and examine the challenges and opportunities facing apple juice processors and apple farmers amidst increasing demand for sustainably produced apple juice globally.
- Develop a business plan for **Austria Juice** and **Puhan Cooperative** to jointly create a sustainable industrial apple supply model that integrates smallholder farmers and promotes rural revitalisation.
- Produce recommendations that take into account:
 - ✓ The balance between the commercial viability of the business and the long term economic and social wellbeing of smallholder farmers;
 - ✓ Country context including the social, economic and environmental factors that impact the rural sector;
 - ✓ Supply side of the value chain including farmers' organisation, financing, technical training, sustainable farming inputs, production, quality assurance, logistics, and recommendations for overcoming key challenges and concerns;
 - ✓ Demand side including branding and communications strategies.
 - ✓ The potential for scalability in Xianyang, Shaanxi province and Yongji, Shanxi province.



SCOPE OF PROJECT (2/2)

The GLP is a two-week leadership programme combining classroom and field-base learning.

Methodology for Field Project

- Visit facilities along the apple value chain, including Austria Juice processing facility, smallholder apple orchard and apple collection point in Xianyang's Yongshou county, Shanguo commercial orchard as well as Puhan Cooperative smallholder orchard, service center and experimental farm.
- Gain insights from key stakeholders including Austria Juice management, local Fruit Bureau officers in Yongshou, Shanguo management, smallholder farmers, apple traders and Puhan cooperative leaders and members.
- Information gathering and analysis; business model generation and business planning sessions in-country.

Outcomes

- Development of a business plan with analysis of these key areas: Business Model & Governance, Production & Operations, Financial Analysis & Investment, Marketing & Distribution, and Social Impact & Strategic Partnerships.
- Presentation of the business plan to representatives from Austria Juice, Puhan Cooperative, business councils, investors and other associated stakeholders in the value chain.



PROJECT PARTNERS



Austria Juice is a world leading fruit juice concentrate producer and beverage solutions provider. Its product portfolio ranges from high-quality Fruit Juice Concentrates, Beverage Compounds, Fruit Sweeteners, Natural Fruit Juice Flavours, Composition Flavours, Fruit wines and many more.

Among its 15 production facilities across the world, Austria Juice operates a Apple Juice Concentrate (AJC) processing facility in Yongshou, Xianyang, China under its wholly owned subsidiary Agrana Juice (Xianyang) Co. Ltd. The facility built in 2006 has a built capacity of 30,000 tonnes of AJC per year.

Austria Juice intends to increasingly source raw materials directly from farmers and implement a “Cradle to Gate” traceability system which is auditable by a 3rd party to meet market demand for product sustainability.



Puhan Cooperative

Puhan Cooperative (蒲韩乡村联合社, “Puhan”) was founded in Yongji, Shanxi province in 1998. Starting as a farming supplies store, it developed into a service oriented multifunctional cooperative under the leadership of Madame Zheng Bing, with a strong focus on sustainable farming and rural regeneration to create livable villages.

The cooperative has a membership base of 3,865 rural households in Puzhou and Hanyang townships, accounting for 58% of the population in the area who cultivate a total of 70,000 mu (4,667ha) of farmland.

Puhan’s knowhow and experience can be leveraged to develop an integrated solution that addresses the sustainable apple sourcing needs of Austria Juice and the multi-faceted needs of rural communities.



COUNTRY OVERVIEW – CHINA

China's Development and the Agricultural Sector

- Since the country's reform and opening up in 1978, China saw an 82 fold increase in GDP. In 2017, the economic growth rate slowed to a 26-year low of 6.7, but still remains one of the highest among the world's largest economies. The slow down comes as it transitions from an economy driven by exports and infrastructure investments to an economy led by internal consumption and services.
- A number of major policy initiatives since 2014 focus on the quality of growth in order to achieve a more balanced level of development that is conducive to the sustainable, long term prosperity of the country.
- Over 30 million people (2.15% of the population) are still living in poverty, many of whom are smallholder farmers.
- In 2017, China has pledged to pursue a rural revitalisation strategy to prioritise the development of its agriculture and rural areas and build a “moderately prosperous society” by eradicating extreme poverty by 2020.
- China is the world's largest producer, importer and consumer of food. To overcome structural imbalances, the Government is pushing forward agricultural supply-side reforms with a focus on quality over quantity to meet market demand for safe and high quality food and reduce chemical dependency.

Country Snapshot (2017)

- Population: 1.39 Billion
- GDP(nominal): USD 12.2 trillion
- GDP per capita: USD 15,600
- GDP growth rate: 6.7%
- Inflation rate: 7.5%
- GDP composition by sector
 - Agriculture: 7.9%
 - Industry: 40.5%
 - Service: 51.6%
- Urban Population: 58.5%



China is in the midst of a transition to achieve sustainable and long term prosperity

CHINA'S RURAL REVITALISATION STRATEGY



"The quality of a moderately prosperous society and socialist modernisation is determined by agricultural competitiveness, rural environment and rural incomes."

– President Xi Jinping



- China's rural revitalisation strategy signalled a shift in the country's development focus from unbridled economic growth to better quality expansion and improved wealth distribution.
- The government recognised that 'unbalanced and inadequate development' have been the main constraints for people seeking to build better lives.
- China has approximately 230 million smallholder households with an average land size of 5mu (0.3ha). Farm size in China is significantly smaller compared to other countries.
- A majority of smallholder farmers operate in a fractured value chain that prevents them from benefitting from the investments being made into the agricultural sector.
- Establishing long-term mechanisms to integrate smallholder farmers into modern efficient value chains is fundamental to both rural sustainability and meeting market demand for safe, high quality produce.

Smallholder farmers are the backbone of China's agricultural sector and rural economy

SUSTAINABLE DEVELOPMENT GOALS (SDGs)



The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDG), which are an urgent call for action by all countries.

- As the largest developing country in the world, China has always given top priority to development.
- In its 13th Five Year Plan (2016-2021), the Chinese government has aligned its mid- and long-term development strategies with the 2030 Agenda for Sustainable Development.
- The 17 Sustainable Development Goals (SDGs) and 169 targets are integrated into China's overall development planning.
- The biggest challenges for China in realisation of the 2030 Agenda remain the following: how to eradicate poverty, improve people's livelihood, defuse social problems, achieve common prosperity, improve national governance system and capability and achieve coordinated development among different regions, at all levels and in all fields.



Implementation of the 2030 Agenda for Sustainable Development is in full swing in China

XIANYANG AND YONGJI

Overview of Xianyang, Shaanxi Province

- Xianyang is a prefecture-level city in central Shaanxi province, with a population of 4.98 million, GDP of RMB 234 billion (USD 34 billion) and urbanisation rate of 51%.
- Xianyang is one of the major agricultural production regions in Shaanxi, with 3.2 million mu (213,000 ha) of apples under cultivation.
- It accounts for 1/9 of China's apple production and 1/6 of world's apple juice concentrate (AJC) production.

Map of Xianyang in Shaanxi Province



Overview of Yongji, Shanxi Province

- Yongji is a county-level city under the prefecture-level city of Yuncheng in Shanxi province, bordering Shaanxi province to the west along the Yellow River.
- It has a population of 462,100, GDP of RMB 13.1 billion (USD 1.9 billion) and urbanisation rate of 54 percent.
- Yongji is famous for its wide variety of fruits and vegetables produced.
- This important area of central China is also known as the cradle of Chinese civilisation with over 7 thousand years of agricultural history and invaluable knowledge that has shaped traditional sustainable agricultural practices in China.

Map of Yongji in Shanxi Province





CURRENT CHALLENGES & OPPORTUNITIES

CHINA'S APPLE INDUSTRY AND THE SUSTAINABILITY CHALLENGE

- China accounts for over 58% of global apple production, with orchards covering 2.3 million hectares.
- Shaanxi, Shanxi and Shandong provinces are the main apple producing areas. Large-scale planting among smallholder farmers began in the late 1980s with the support of local governments.
- In the early 2000s, as apple production exceeded demand for local fresh consumption, China has seen a rapid growth of the apple juice concentrate (AJC) industry to increase the value of the surplus.
- Currently China accounts for over 50 percent of AJC production globally, making it the biggest producer and exporter of AJC.
- However, the growth of the industry and the overuse of chemicals also present significant sustainability challenges to China's apple sector:



Overuse of Chemicals

China uses about one-third of the world's chemical fertilisers, and 2.5 times the average amount of pesticides used in developed countries. Excessive use of fertilisers and pesticides have polluted water sources, contaminated and degraded land and left pesticide residue on fruits.



Monoculture

The reduced biodiversity and absence of crop-livestock circular farming in monoculture practice deteriorated the soil and ecological balance in the orchard.

Monoculture also poses high risk to smallholder farmers in a volatile market.



Reduced Income

Aging trees and degraded land has resulted in reduced yield and income for farmers.

With low and volatile apple prices and rising input and labour costs in recent years, many farmers have switched to growing other crops, resulting in reduced raw materials for the AJC industry.



Social Disparity

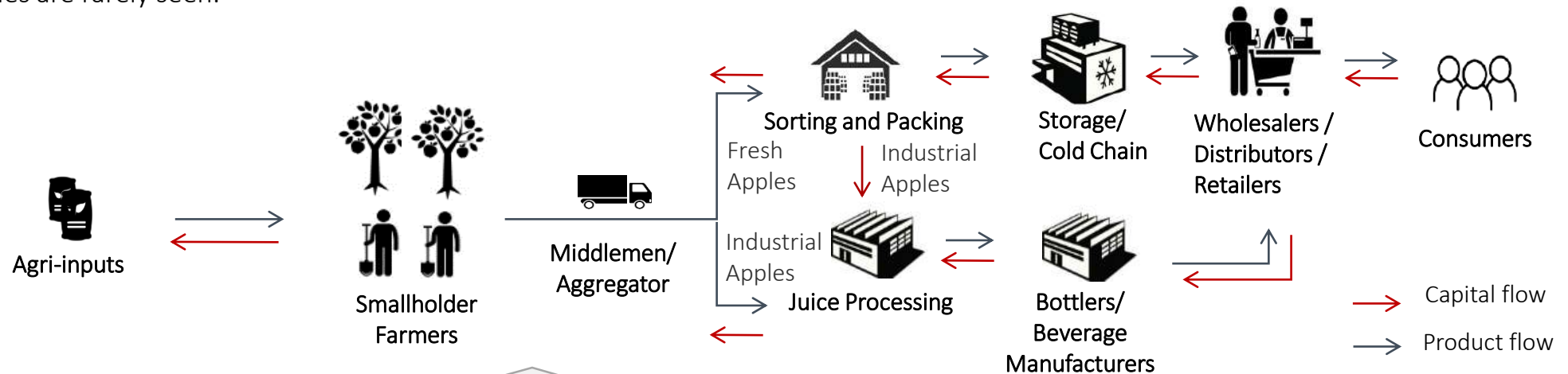
The growth of large scale industrial orchards often crowds out smallholder farmers. Due to the lack of capacity to enter a market dominated by large players, smallholder farmers at the bottom of the value chain often fail to capture a fair value for their produce.

- Growing awareness around food safety, especially among the middle class, is expected to lead to a growing movement towards sustainably-grown produce. This will have significant implications for the entire value chain.

Improving China's apple value chain must address ecological balance, food safety and social challenges

THE FRAGMENTED APPLE VALUE CHAIN

Majority of the apples in China are grown by smallholder farmers and sold through middlemen via a long and fragmented value chain. As fresh market apple prices are 3-10 times higher than that of industrial apple, over 80% of the apples produced in China are sold to the fresh market. Only second grade apples and low quality surplus are sold for industrial processing. Orchards dedicated to industrial apples are rarely seen.



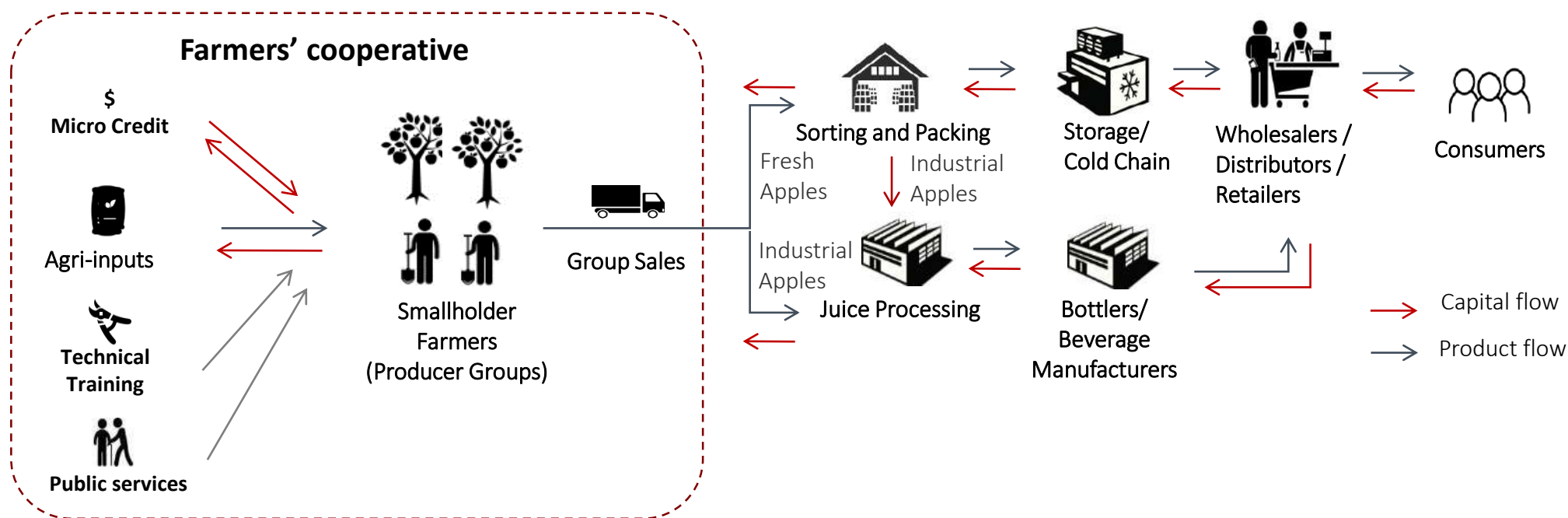
Industrial Apples from Smallholder Farmers

- Grown on small parcels of land averaging 3 to 10 mu (<1ha) per household
- Smallholder farmers often lack technical support and financing to improve production
- Second grad apples (10-30% of production) from different farmers are mixed and aggregated by middlemen at village collection points, making it difficult to ensure consistency and quality
- Due to the unorganised nature of the value chain, it is difficult to address quality and sustainability issues in production and implement a fully traceable and verifiable system

Sourcing through middlemen makes it difficult to ensure consistency and quality of apples

THE NEED OF AN INTEGRATED APPLE VALUE CHAIN

Scattered smallholder farmers need an organisational platform to provide supporting services to improve production, environmental sustainability and livelihoods. Organising farmers through a cooperative provides a platform to deliver the needed support and integrate smallholder farmers into an efficient modern value chain. It also makes developing dedicated industrial apple orchards possible.



Sourcing of Industrial Apples through Cooperatives

- Establishes dedicated industrial apple orchards, improves product quality and yield, and lowers production cost
- Creates positive economic, social and environmental impact in local communities
- Implements a fully traceable and verifiable system to address quality and sustainability issues

Sourcing through cooperatives can ensure the supply of sustainably produced apples

CURRENT CHALLENGES OF AUSTRIA JUICE

- Austria Juice's facility in Xianyang processes around 90,000 tonnes of industrial apples annually.
- The apples are sourced from smallholder orchards from within 100km in Yongshou, Liquan and Qian county in Xianyang through middlemen.

Austria Juice's current sourcing areas in Xianyang



Current Challenges

- The current sourcing model does not include a common, fully traceable and verifiable system starting with the farmer which is increasingly demanded by Austria Juice's customers.
- The declining availability of apples for processing is also a major concern for Austria Juice as farmers are increasingly fresh market focused or shifting to other crops to get a higher income as apple prices dropped in recent years. The younger generations are also less interested in farming and many have migrated to the cities.
- In addition, the proximity to 11 other AJC processing factories in Xianyang creates tough competition and volatile pricing for raw materials. Many factories, including Austria Juice are running below capacity due to insufficient raw materials supply.
- Quality of raw materials is difficult to control. Apples supplied are often individually wrapped in plastic bags as they are mainly residue of apples grown to target fresh market. The plastic bags make processing difficult and create a lot of plastic waste.

The AJC industry in Xianyang is facing an uncertain future with tough competition for raw materials

SWOT ANALYSIS OF AUSTRIA JUICE & CONFRONTATION STRATEGIES

The SWOT analysis allows a structured examination of the internal and external factors that will influence the success of **Austria Juice**. Following that, a confrontation matrix has been applied to outline the various strategies that can be used to take advantage of the strengths and opportunities, as well as defensive and protective strategies to manage the threats and weaknesses.

Strengths

- Long history in agriculture in Europe
- Rich and extensive knowledge in sustainable production methods in Europe
- Have built lasting relationships with large scale customers over the years

Weaknesses

- Foreign company in China
- Sourcing from dispersed farmers

Opportunities

- Demand from existing customers for sustainable/traceable sourcing
- Demand for organic / fresh fruit juices increasing within China domestically and globally
- Opportunity to develop sustainability standard for smallholder apple farming in China
- Opportunity to source from Puhan Cooperative

Threats

- Declining supply of apples around factory
- Volatile and declining AJC prices in recent years (2012 -2017)
- Customers sensitive to price increases
- Customers increasingly asking for sustainably produced products
- Trade disputes giving rise to import tariffs into the US

Offensive Strategies

- Collaborate with reliable partners in China for a stable source of apples
- Pilot a sustainability standard for smallholder apple farming in China
- Enter the domestic juice concentrate market and develop new products (e.g. other juices and organic juices)

Protective Strategies

- Cater to customers' tastes for more sustainable or organic products
- Diversify into other emerging markets (e.g. China & Southeast Asia)
- Form contract with local supplier to stabilise prices

Improvement Strategies

- Partner with local entities to strengthen local connections
- Enhance Austria Juice's visibility by extending training and promoting own products locally
- New method to source locally or distribute some operations to apple producing areas

Defensive Strategies

- Need reliable partners in China to organise farmers and provide stable supply
- Relocation of factory closer to sources
- Relocation of Chinese operations to other areas without trade tariffs

THE OPPORTUNITY TO WORK WITH PUHAN COOPERATIVE

- To ensure a stable supply of sustainably produced industrial apples, it is imperative for Austria Juice to work directly with farmers' cooperatives to develop an integrated value chain.
- In September 2017, when Austria Juice started to look into introducing sustainable apple production in China, Puhan Cooperative was found to be a potential partner for collaboration.
- Puhan Cooperative has developed a farmer-focused, socially-inclusive cooperative model over the span of 20 years and accumulated a wealth of knowledge and experience in sustainable farming and community services.
- Partnership with Puhan Cooperative will provide a strong foundation to pilot an integrated cooperative sourcing model that can provide a stable supply of sustainably produced industrial apples for Austria Juice.
- Austria Juice will gain on-the-ground expertise in working with smallholder farmers in China to raise sustainability standards in apple production.
- Austria Juice and local experts in China will also bring in expertise in managing intensive apple orchards to improve productivity and sustainability in Puhan's smallholder orchards.
- Learnings from the pilot can then be drawn on to develop a cooperative sourcing model in Xianyang in the longer term.



Opportunity for Austria Juice to consider a cooperative model in sourcing sustainable apples



BUSINESS MODEL & STRATEGY

RATIONALE OF BUSINESS MODEL

- Austria Juice intends to increasingly source raw materials directly from farmers and implement a “Cradle to Gate” traceability system to improve product quality and sustainability.
- In China, smallholder orchards are relatively small at an average of 10 mu (0.67ha) per household, sourcing directly would mean Austria Juice will have to work with hundreds of thousands of smallholder farmers. Without farmers’ organisations, this would be a near impossible task.
- A cooperative, as an organisational platform, is crucial to creating a self-supporting network among farmers and providing the needed financial, technical and production services to support farmers in adopting sustainable farming practices. The cooperative also becomes an interface between smallholder farmers and downstream buyers and facilitates their integration into the value chain.
- Puhan Cooperative’s knowhow and experience can be leveraged to develop an integrated solution that addresses the sustainable apple sourcing needs of Austria Juice and the multi-faceted needs of rural communities.
- Puhan’s experience has shown that the organisation of services and activities that builds community cohesion and improves community wellbeing is fundamental in enhancing cooperation in agricultural production and restoring rural vibrancy.
- The business model suggests a contractual relationship in Phase 1, and a joint-venture business (“Sustainapples”) in Phase 2. The joint-venture business is intended to help Austria Juice scale up its sustainable apple supply in Xianyang, and for Puhan to disseminate its cooperative model to other regions. This entity would oversee these processes.
- A microfinance fund to support apple planting in the cooperatives is also suggested. This will help secure supply for Austria Juice and aid farmers in purchasing farming inputs.
- The plan also suggests to pilot a distributed processing model in Puhan to provide extra AJC to Austria Juice and open up new NFC (not from concentrate) markets in Asia.

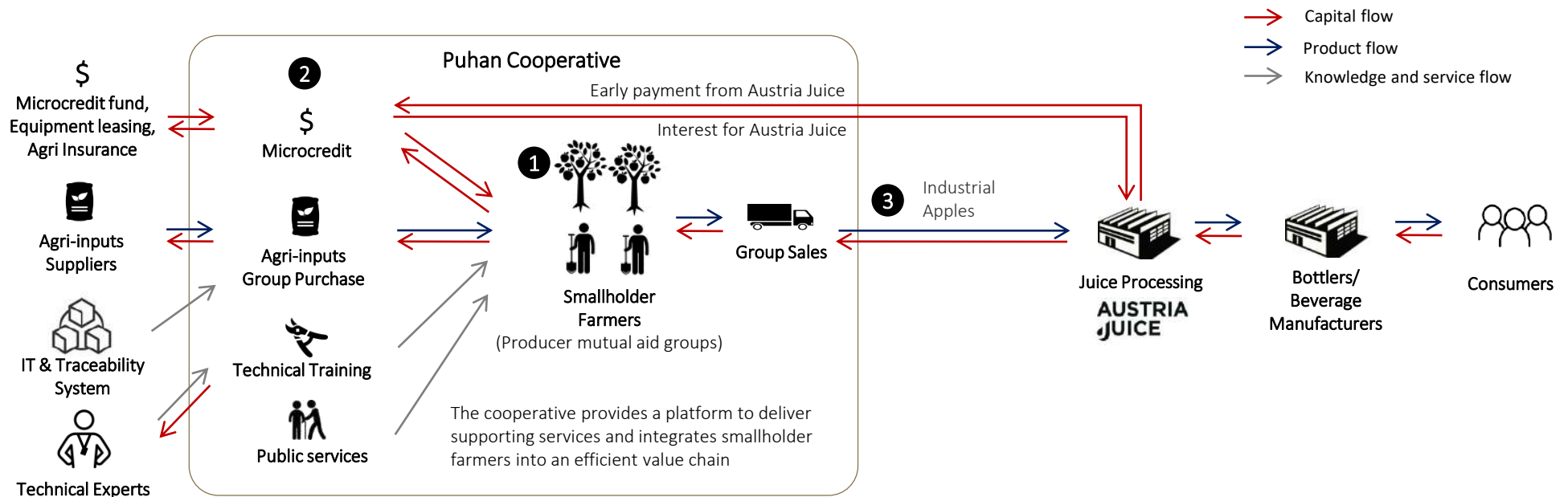


Working with cooperatives promotes sustainable practices and reliable supply

PROPOSED BUSINESS MODEL: PHASE 1

In Phase 1, establishing a **20 year long-term direct purchase contract** with Puhan Cooperative will provide Austria Juice with an opportunity to pilot and refine a cooperative sourcing model that integrates smallholder farmers and ensure a stable supply of sustainably produced apples. At the same time, it will provide Puhan Cooperative with an opportunity to enter the modern value chain and establish a stable sales channel.

Year 2019-2038



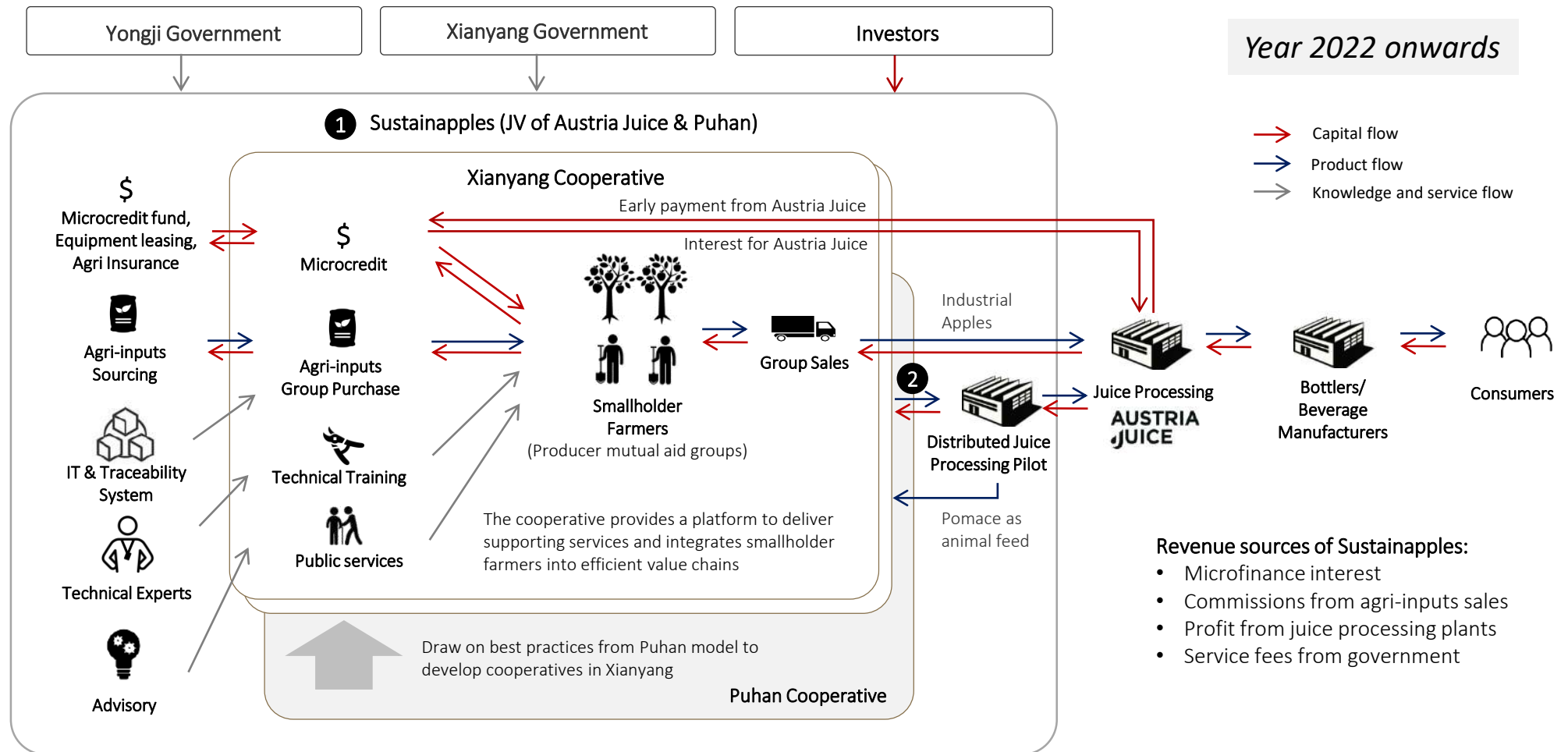
1 Puhan Cooperative will grow industrial apple exclusively for Austria Juice, starting initially with allocating 25% of the production from 4000 mu of existing traditional orchards and gradually adding 9,000 mu of new intensive orchards (taking 100% of output) to reach a total of 13,000 mu by 2024. Puhan will produce 52,000 tonnes of apples per year for Austria Juice by 2028.

2 As part of the direct purchase contract, Austria Juice will provide Puhan Cooperative with an early payment 9-12 months in advance to secure apple supply from the farmers.
The fund will be allocated for microcredit to support the purchase of farming inputs. Austria Juice will receive a 1% annual interest from the microcredit. In addition, a microfinance fund will also be setup to support first three years of planting, and funding may come from both internal and external sources.

3 Industrial apples will be collected by the cooperative and sold to Austria Juice in bulk at a premium price (to be determined).
The contract will also provide a mechanism to stabilise highly volatile market prices through monthly settlement.

PROPOSED BUSINESS MODEL: PHASE 2

In Phase 2, a new company *Sustainapples* will be established to scale up the cooperative sourcing model developed in Phase 1 and develop a distributed network of cooperatives and local juice processing plants in Xianyang and Yongji to build a stable supply for Austria Juice.



1 *Sustainapples*, a JV of Austria Juice and Puhon will provide services and advisory to support the development of cooperatives in both Xianyang and Yongji to further scale up sustainable apple production. It will also manage a fund to support microfinance and community services.

2 A pilot plant for distributed juice processing will be set up in Puhon to produce Apple Juice Concentrate (AJC) and Not From Concentrate (NFC) juices for Austria Juice. A portion of the industrial apples will still be supplied to Austria Juice factory in Xianyang in parallel.

KEY STAKEHOLDERS & INTERESTS

Austria Juice

- Secure long term apple supply to fully utilise production capacity and increase output
- Meet sustainability standards increasingly demanded by customers
- Whole supply chain traceability
- Reduce sourcing cost
- Reduce volatility in apple prices
- Promote good agricultural practices
- Build direct relationships with farmers
- Strengthen relationship with local government
- Capture premium market

Puhan Cooperative

- Secure long-term sales contract to provide members with stable income
- Access to early payment and other funding to offer microcredit for members
- Adopt sustainable farming practices
- Reduce plastics waste in production
- Promote product diversification
- Safeguarding community wellbeing
- Develop young talent
- Share the best practices of Puhan model with other communities

Smallholder Farmers

- Improve health by adopting sustainable farming practices and applying less pesticides
- Gain stable income and reduce market risk
- Healthy living environment
- Community cohesion and mutual support
- Good education and opportunity for children
- Access to microcredit, farming inputs and technical support to improve production
- Producing industrial apples can save chemical and plastic bag usage
- Reduce labour cost through mechanisation

Sustainapples

- Promote best practices of Puhan Cooperative and Austria Juice in sustainable farming and farmers organisation to cooperatives in Xianyang and Yongji
- Support the development of cooperatives in Xianyang and Yongji
- Pilot the concept of distributed processing to help cooperatives move up the value chain
- Manage fund for microfinance and community development to support smallholder farmers and local communities

Xianyang Cooperative

- Organise smallholder farmers in Xianyang and support them with services such as microfinance, group purchase of farming inputs, technical training and community services to promote sustainable farming.
- Secure long-term sales contract to provide members with stable income
- Reduce risk in volatile market
- Access to support in microfinance funding, technical training, cooperative organisation and market development

Local government

- Support efforts to improve agricultural practices and productivity among smallholder farmers
- Modernise the agricultural sector
- Improve livelihoods of smallholder farmers
- Support initiatives that make positive impact on the local community both socially and economically
- Provide technical training to cooperatives
- Encourage the development of high value added processing industry

Strong interest from key stakeholders enables feasibility of the business

PRICING MODEL (PHASE 1)

To incentivise smallholder farmers to produce sustainable industrial apples, a price premium needs to be given to sustainably produced industrial apples and AJC. The pricing is influenced by the following factors:

AJC Price

In the global market, AJC price is highly volatile, and is influenced by apple supply, market demand and inventory size. Due to increasing supply in Poland and embargo in Russia, global prices for Chinese AJC has dropped in recent years to around USD 1000/tonne. Historically, the highest Chinese AJC price was USD 1922/tonne in 2012. While the low AJC price makes Chinese AJC highly competitive in the global market, it also pushes down industrial apple prices and disincentivise farmers from growing industrial apples.

Production Cost

Farming inputs and labour costs have been rising in recent years. The cost for industrial apple is around RMB3200/mu (USD6,906 /ha) at a yield of 4 tonnes/mu.

Farmers also weigh opportunity cost against other fruits such as peaches which has lower production cost.

Cost saving and hence higher income for farmers can come through higher yield, eliminating wrapping, reducing labour for flower and fruit thinning, reducing chemical inputs and applying mechanical harvesting.

Industrial Apple Price

Industrial apple prices have dropped to a historical low of less than RMB 0.7/kg in recent years due to the drop of AJC prices and the low quality of industrial apples which fails to command a price premium.

Industrial apple price is highly volatile across season and changes daily depending on local competition, making it difficult for both farmers and processors to manage market risk.

A long-term contract for high quality, sustainably produced industrial apples can stabilise prices for both farmers and processors.

Fresh Market Apple Price

As the price of fresh market apple is 3-10 times higher than the price of industrial apple, farmers often prefer to sell their apples to the fresh market.

It becomes a risk for processors when the availability of industrial apples shrink.

However as the fresh apple market is highly competitive, it is also favourable for farmers to focus on industrial apples if a stable supply and price premium which falls between fresh market apple and industrial apple can be negotiated.

The pricing will be determined by Austria Juice and the cooperatives based on a mutually agreed model. It is suggested that the farm gate purchase price, at a premium, will use a function of AJC price, production cost, industrial apple price and fresh market apple price as reference. The following is an example:

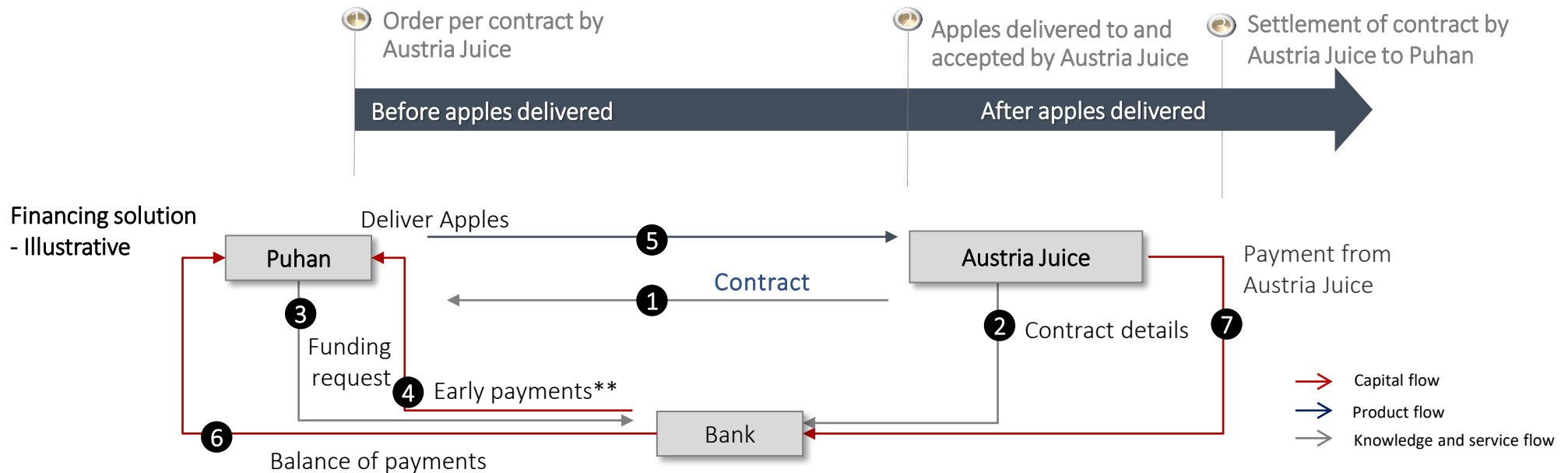
$$\begin{aligned} \text{Purchase Price (illustrative)} &= \text{Weight x (AJC Price in RMB /Conversion to Apple Vol. x Premium)} + \\ &\quad \text{Weight x (Production Cost/Yield x Coop Margin)} + \\ &\quad \text{Weight x (Industrial Apple Price x Premium)} + \\ &\quad \text{Weight x (Fresh Market Apple Price x Discount)} \\ &= 0.3 (6.9/6^* \times 1.2) + 0.3 (3200/4000 \times 1.8) + 0.2 (0.7 \times 1.8) + 0.2 (2.5 \times 0.6) \\ &= \underline{\text{RMB 1.4 /kg}} \end{aligned}$$

*6 tonnes of apples required to make 1 tonne of AJC

The purchase price can be calculated using monthly average and transaction can be settled monthly to stabilise prices. Variability of prices among farmers selling at different months can be compensated through profit sharing adjustment at the end of the year.

PURCHASE CONTRACT FINANCING MODEL (PHASE 1)

Austria Juice and Puhan can explore various financing models to support production. Below is an example of an early payment financing model facilitated through a bank.



- 1 Austria Juice enters purchase contract with Puhan
- 2 Austria Juice submits contract details electronically to bank
- 3 Puhan requests for early payment for approved contract volume/payment 9-12 months in advance to facilitate production
- 4 Bank will process **Early Payments** to Puhan – this will be a portion of the total contract amount.

Bank charges may apply based on the preferential rates. Puhan can then get credit based on Austria Juice's better credit rating

- 5 Puhan delivers apples to Austria Juice as per existing trade process
- 6 Balance of payment
- 7 **Payment from Austria Juice**, bank will debit Austria Juice current account as per payment/invoice due date

KEY BENEFITS FOR THE LOCAL COMMUNITY

The following are key benefits of the proposed business model for the local community:

	Key Benefits for Farmers	Key Benefits for Cooperatives
Economic	<ul style="list-style-type: none">• Dedicated orchards for industrial apples reduce material cost by eliminating the need for plastic wrappers and most chemicals inputs used in fresh market apple production• Eliminates labour cost in flower and fruit thinning• Reduces labour cost through mechanisation• Stable base income from 20% of land used; additional income to come from high value crops on remaining land	<ul style="list-style-type: none">• Achieve economies of scale and long-term stable revenue from group purchase of farming inputs, microfinance and group sales.• Reduce cost of inputs through group purchasing• Profit sharing from distributed processing• Profit sharing with cooperative members
Environmental	<ul style="list-style-type: none">• Eliminates waste from plastic and paper wrappers• Reduces the use of chemical inputs• Soil restoration using local inputs such as compost, enzyme and microbial fertilisers• Water conservation• Clean and safe orchards	<ul style="list-style-type: none">• Soil restoration at a large scale• Better management of resources such as water and waste at the community level• Reduces pollution from chemical spraying in the neighbourhood• Clean and safe community
Social	<ul style="list-style-type: none">• Creates new opportunities for aspiring young members in the cooperative• Elderly care center to support senior members• Preschool close to home for young children• Mutually supportive community	<ul style="list-style-type: none">• Retaining young talent to work in cooperative• Builds trust and enhance social cohesion• Creates a healthy and comfortable living environment in the community• Supports rural revitalisation and poverty alleviation

The business model provides a wide range of economic, environmental and social benefits



ORGANISATIONAL STRUCTURE AND GOVERNANCE

ORGANISATION STRUCTURE & GOVERNANCE



The proposed business plan involves 2 phases: In Phase 1, Austria Juice enters into a direct purchase contract with Puhan Cooperative to pilot a cooperative sourcing model. In Phase 2, a new company Sustainapples will be established to scale up the cooperative sourcing model developed in Phase 1 and develop a distributed network of cooperatives and local juice processing plants in Xianyang and Yongji.

This section covers the governance recommendations for both phases.

Phase 1

This phase is characterised by a direct contracting relationship between Austria Juice and cooperatives like Puhan. The section outlines the mutually beneficial contractual terms for the relationship. Puhan Cooperative has a robust governance structure that would ensure the fulfilment of the contract and any new ventures therefore this structure has been included as reference.

Phase 2

It is suggested that a new company 'Sustainapples' be established through a joint-venture between Austria Juice, Puhan Cooperative and external investors. To ensure interests of all parties are represented and aligned, this section proposes suggested shareholding and governance structures, as well as its organisational structure and transparency and disclosure guidelines.

CONTRACTUAL RELATIONSHIP (PHASE 1)

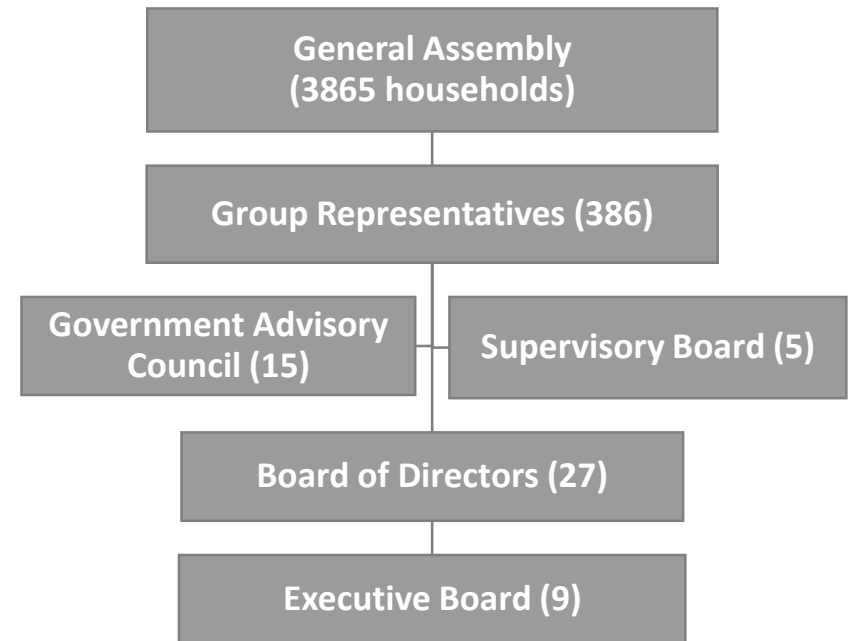
- Austria Juice and Puhun Cooperative to enter into a 20-year contract from 2019 to secure a stable supply of industrial apples grown on dedicated smallholder orchards using sustainable farming practices.
- The contract will start initially with 4000 mu in 2019 gradually increase to 13,000 mu by 2024.
- Puhun Cooperative to supply industrial apples exclusively for Austria Juice.
- In exchange for the exclusive contract, a premium to be agreed upon by both parties will be added to the market price at time of purchase.
- An early payment will be given by Austria Juice to Puhun Cooperative 9-12 months in advance to secure apple supply for the year. The early payment will be used by Puhun Cooperative to give out microcredit to farmers for farming inputs and land leasing. Austria Juice will receive a 1% interest on this payment.
- The planting will be supported by a microfinance fund at 80% of the production cost to be raised by Austria Juice and Puhun Cooperative. It is suggested that farmers pay an interest rate of 3% with 2% going to Puhun for its management and 1% going to the funder.
- There should be an open exchange of expertise and regular meetings to discuss contractual details.



GOVERNANCE STRUCTURE - PUHAN COOPERATIVE

Puhan Cooperative has a rigorous governance structure that would be able to ensure the objectives of this contract be met, including the growing of apples according to Austria Juice requirements, and any consultant services for new cooperatives in Xianyang.

- The Board of Directors (27 members) and Supervisory Board (5 members) are elected by the General Assembly every three years.
- The Executive Board is responsible for major decisions in the operations.
- It is suggested that Austria Juice nominates a representative to consult with the Executive Board on issues related to the contractual relationship.



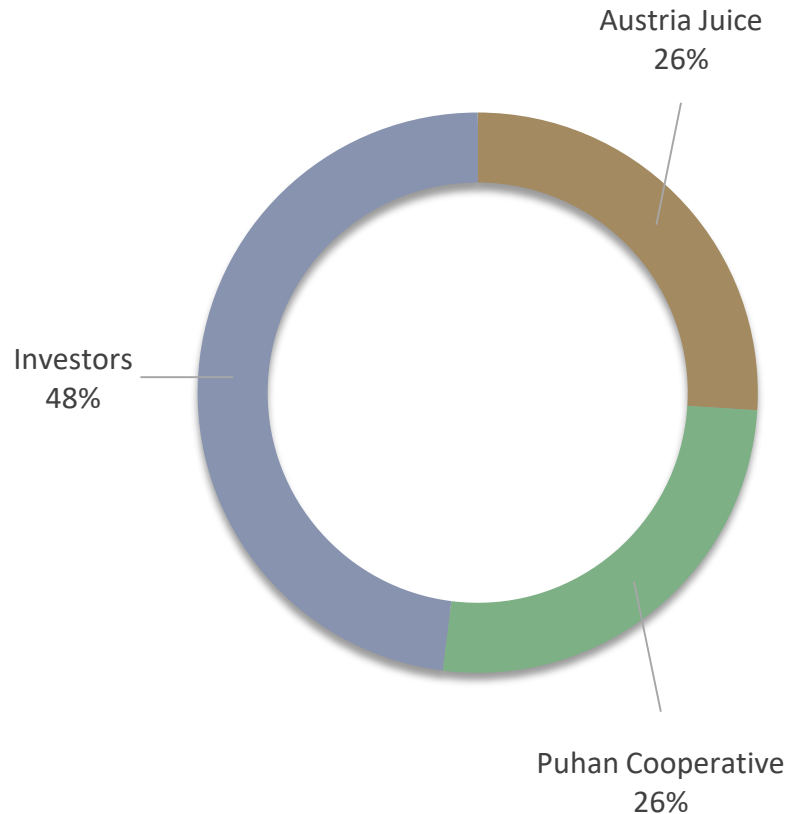
ESTABLISHMENT OF SUSTAINAPPLES (PHASE 2)

- In Phase 2 it is suggested that a new venture 'Sustainapples' be established to oversee the establishment of Xianyang Cooperative and distributed juice processing plants.
- Sustainapples would comprise of young staff from Puhan Cooperative and strive to attract more young people into the business.
- The business would manage the coordination between Xianyang, Puhan and other cooperatives to supply industrial apples for Austria Juice.
- The business would also oversee a new pilot local processing plant in Puhan to that would produce AJC, NFC (not from concentrate) and other new juice products.
- The business would also manage the microfinancing for the cooperatives and receive income in the form of interest.
- Austria Juice's nominated staff would take care of the day-to-day running of the company, while Puhan's nominated staff will leverage its expertise to help establish the Xianyang Cooperative, with support from the government.



RECOMMENDED SHAREHOLDING STRUCTURE OF SUSTAINAPPLES

Proposed Shareholding Structure of Sustainapples



AUSTRIA JUICE

- Austria Juice provides 26% of funding to establish the company and retain 26% shareholding
- Austria Juice takes care of the management of the company
- It provides the expertise to set up any new distributed juice processing plants



- Puhan provides expertise in organising farmers, training on ecological farming methods, and organising community services for new cooperatives such as Xianyang Cooperative
- It liaises with government for support
- Puhan provides 15% funding (to be agreed by both parties) and the above intellectual property in exchange for 26% stake in Sustainapples

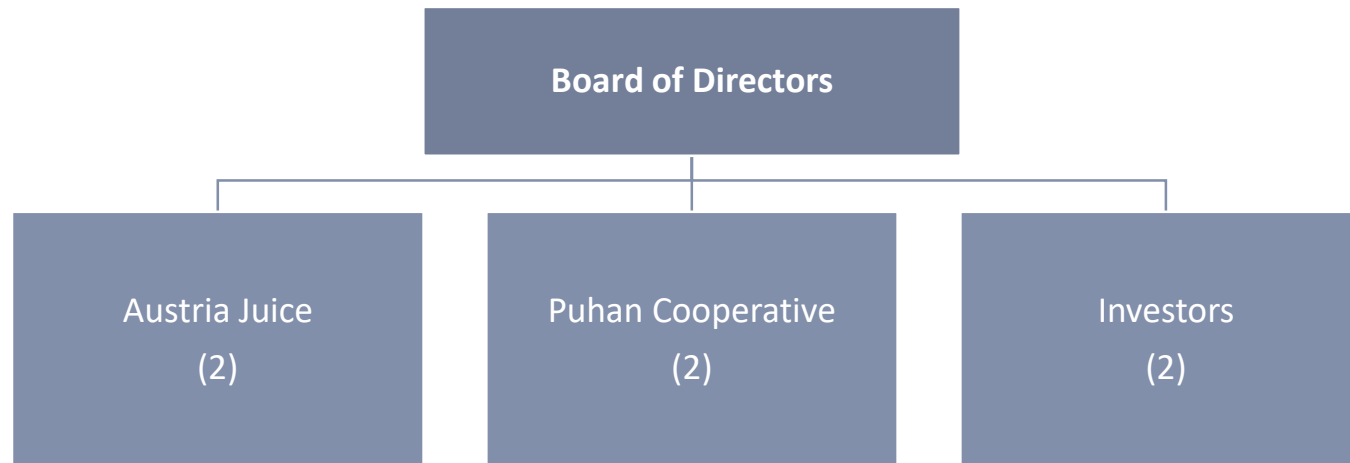


- Investors will provide capital to support the business and retain a maximum shareholding of 48% in Sustainapples.
- No single investor shall retain more shares than either Austria Juice or Puhan.
- It could include banks, impact investors, chemical and food companies and ecommerce companies

Each party contributes their respective strengths to ensure success of Sustainapples

GOVERNANCE STRUCTURE - SUSTAINAPPLES

- The Board of Directors is responsible for providing oversight and advice as well as setting the strategic direction for Sustainapples and monitoring to ensure Sustainapples achieves its mission.
- Below is the suggested governance structure of Sustainapples:



6 Board Members comprising:

- 2 representatives from Austria Juice
- 2 representatives from Puhan Cooperative
- 2 representatives from Investors

Structure ensures a balanced representation from all interested parties

GOVERNANCE FRAMEWORK OF SUSTAINAPPLES

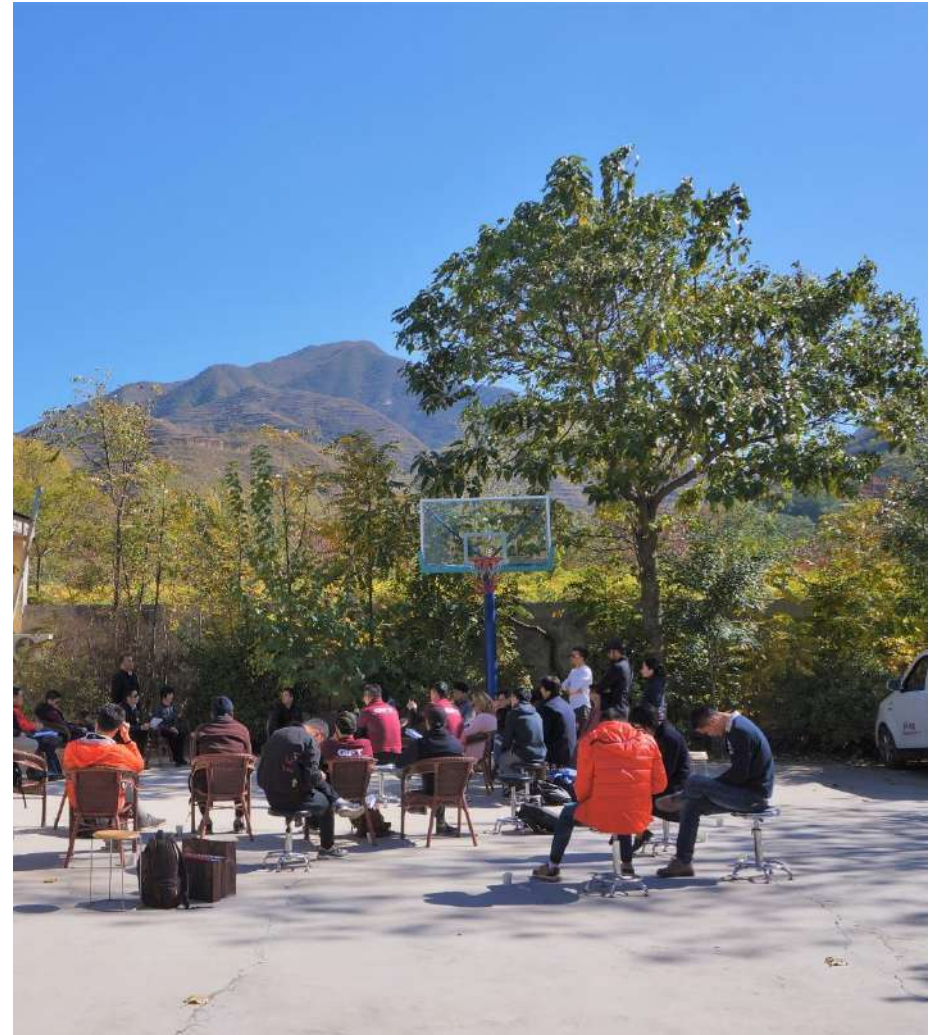
The governance structure should be designed to ensure that obligation and rights of stakeholders are addressed, and social mandates are met. It supports business growth in a sustainable way.

Objectives of the governance framework

- Enabling alignment of interests, promoting mutual benefits and developing a fair basis for profit distribution to shareholders.
- Ensuring a sustainable partnership between Austria Juice, Puhan Cooperative and farmers, so that all activities of the business benefit the society and community in the long run.
- Being transparent to all stakeholders

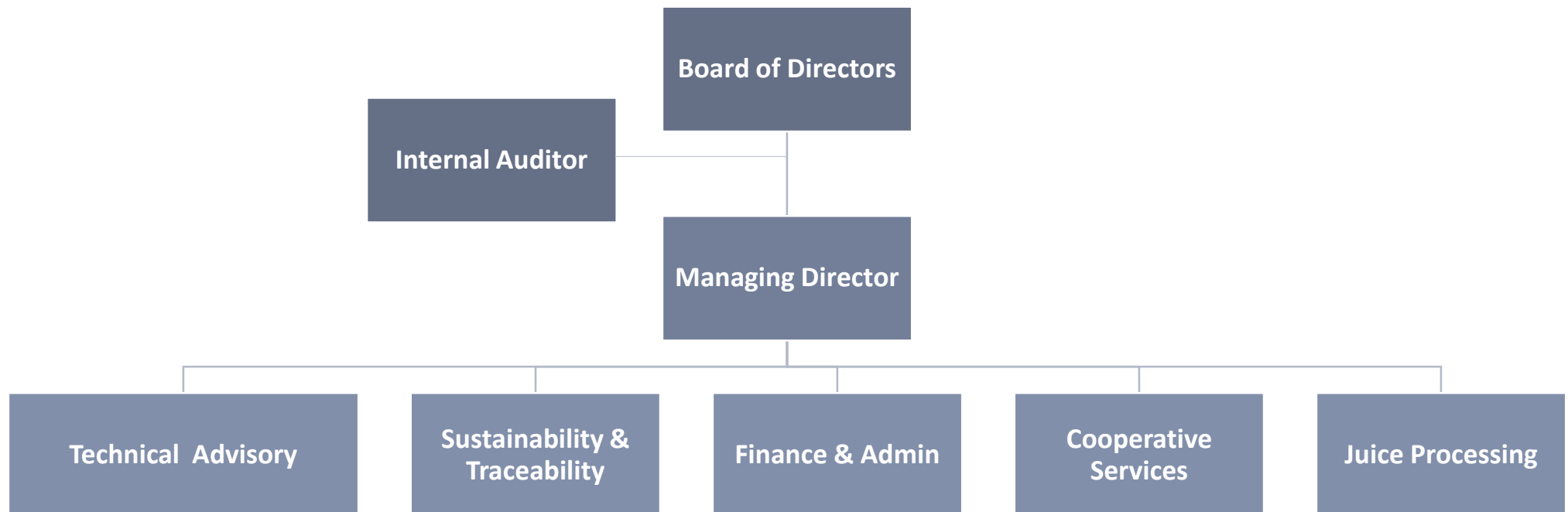
Guiding principles

- Compliance with all national and regional laws relevant to the business and those in the farming and processing sectors.
- Advocate and put in place management and financial transparency, accountability and disclosure.
- Safeguarding of the interest of the organisation and its various stakeholders from any unethical practices and misconduct.
- Fulfilling social obligations, including commitment toward partners and stakeholders, commitment toward community and food safety.
- Commitment to sustainable farming so that society and environment do not pay off in the form of externalities.



ORGANISATIONAL STRUCTURE - SUSTAINAPPLES

- Sustainapples will be established as a Limited Liability Company in China.
- It is recommended that Sustainapples be run by a dedicated operational Management Team governed by a Board of Directors.
- While not sitting in the Board of Directors, the local government plays an important role to provide high level input and support to Sustainapples.



KEY ROLES & RESPONSIBILITIES - SUSTAINAPPLES

Key roles and responsibilities of the Management Team of Sustainapples:

ROLES	RESPONSIBILITIES
Managing Director	<ul style="list-style-type: none">▪ Responsible for operations and overall performance of Sustainapples to ensure the joint venture meet the strategic direction set out by the Board of Directors▪ Manage key stakeholders▪ Report to the Board of Directors
Financial Controller	<ul style="list-style-type: none">▪ Responsible for financial planning & reporting▪ Manage financing for cooperatives
Head of Technical Advisory	<ul style="list-style-type: none">▪ Responsible for providing technical knowledge transfer and training to support cooperatives▪ Conduct research on apple varieties and farming techniques to improve production
Head of Sustainability & Traceability	<ul style="list-style-type: none">▪ Develop sustainability and traceability management systems▪ Perform sustainability audit
Head of Cooperative Services	<ul style="list-style-type: none">▪ Advise cooperatives on farmers organisation and daily operations▪ Manage key suppliers of goods and services to cooperatives▪ Organise group purchase of farming inputs
Juice Processing	<ul style="list-style-type: none">▪ Coordinate apple collection and delivery▪ Develop distributed juice processing plants

TRANSPARENCY & DISCLOSURE

To ensure Sustainapples achieves the objectives set out by the key stakeholders in the Board of Directors, it is recommended that Sustainapples adopt the following monitoring and governance framework with regards to disclosure of its financials and operations.

MONITORING BY BOARD OF DIRECTORS

Develop vision and mission for Sustainapples as well as 5 year strategic direction

Approve the annual business plan to ensure it is aligned with the company vision, mission and long term strategic direction

Conduct quarterly Board Meetings to evaluate performance and review operations of Sustainapples

Review internal and external audit reports

Make decisions on hiring/firing of Sustainapples' Management Team (Managing Director and direct reports)

INTERNAL CONTROL

- Develop annual plan following the vision set out by Board of Directors
- Establish policies with regards to conflicts of interest, corruption and money laundering
- Perform annual internal audit on the following key areas
 - Financial reporting
 - Operations of apple plantation and the process of sapling cultivation
 - Operations of knowledge transfer
 - Apple pricing and collection
- Perform spot check on compliance of policies and other operational processes

DISCLOSURE

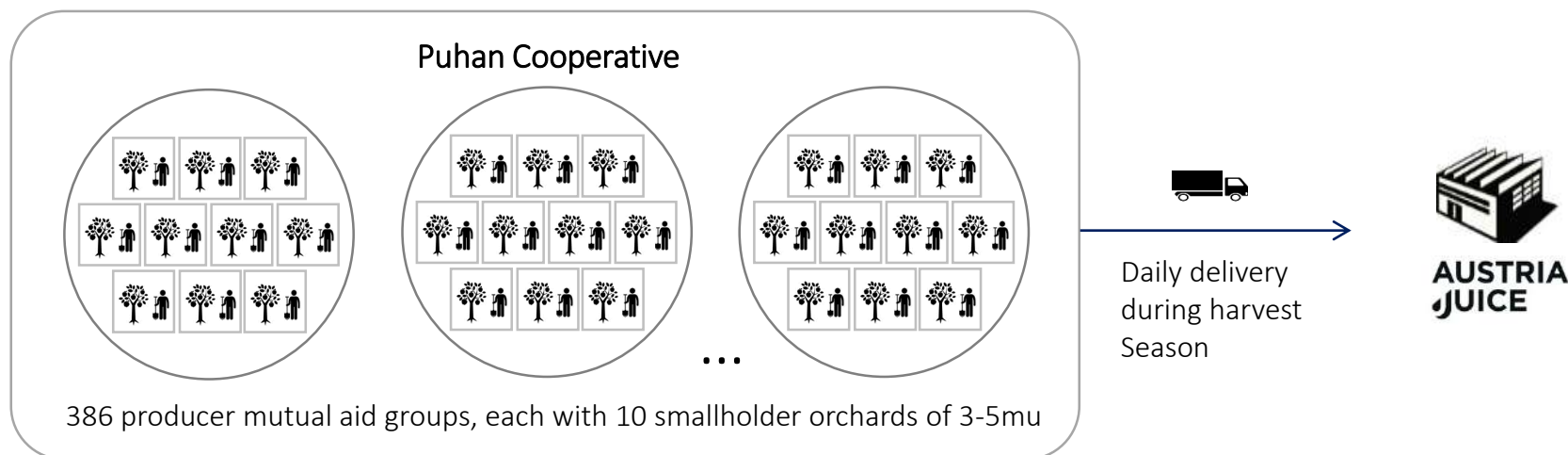
- Public declaration of company's vision and mission
- Audited financial reports including annual reports
- Invite local entrepreneurs and small farming households to attend forums and training sessions organised by Sustainapples
- Invite NGOs to partner and perform annual report on environmental impact



OPERATIONS

PRODUCTION IN PUHAN UNDER PURCHASE CONTRACT (PHASE 1)

- Puhan cooperative organises production through 386 producer mutual aid groups each consisting of 10 smallholder members.
- Puhan also assigns 26 core leaders, each managing 5-35 producer mutual aid groups.
- To promote product diversification, each household will only allocate 20% of their land (3-5mu) for industrial apples.
- Micro credit, group purchase of farming inputs, technical training, mechanised services and group sales are offered by the cooperative to support production. The services are managed by 38 full time staff.



Planting

- 13,000 mu of dedicated orchards will be developed from 2019 to 2024.
- 2,000 mu of new trees will be planted in Y1, 7,000 mu in Y2, and by Y6 4,000 mu converted from existing orchards, using dwarfing rootstocks and high density planting (100 trees/mu).
- By 2028, production will reach 52,000 tonnes when all 13,000 mu of intensive orchards are in full production at 4 tonnes per mu.
- Planting will be planned with early season and late season varieties to spread out harvest time.

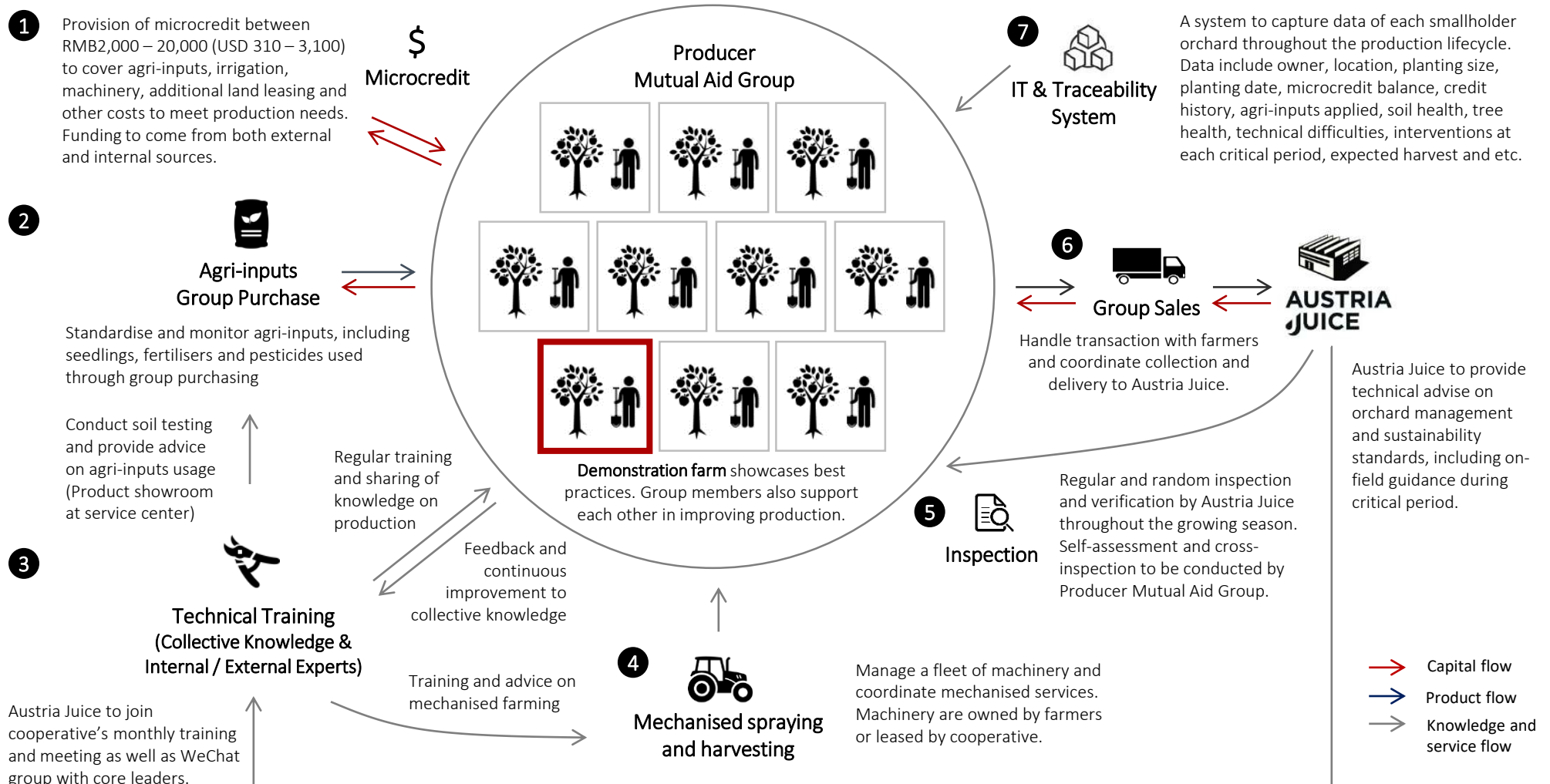
Delivery and Traceability

- Delivery is coordinated by the producer mutual aid groups and managed by the cooperative.
- Puhan will start to deliver 3000 tonnes of industrial apples from 4000 mu of existing orchards starting in 2019 as a first move in the collaboration.
- Products delivered can be traced back to producer groups and smallholder orchards.

Organisation through producer mutual aid groups provides a strong foundation for production management

PRODUCTION MANAGEMENT SYSTEM

- The following is a production management system proposed based on Puhan Cooperative's current practice. Services are managed by the cooperative and coordinated through the Producer Mutual Aid Groups to support production and ensure sustainability standards are met.
- Each Producer Mutual Aid Group is led by a group leader elected by the members. The group leader will hold a weekly group meeting to track process, resolve any production related issues, share experience and coordinate services needed by the members.



KEY INSIGHTS ON SUSTAINABLE FARMING

The following are some insights from Puhan on sustainable farming:

- **De-chemicalisation** – After witnessing the impact of excessive chemical application in farming, Puhan started its organic conversion in 2006. Smallholder farmers participate by converting small parcels of land (1-2 mu) gradually.
- To restore soil health and ecological balance, Puhan promotes **circular farming** and introduces the zero-waste and odourless “Fermentation Bed” technology to improve waste management and reduce labour in livestock farming. The fermentation beds material is also a good source of organic fertiliser for crops.
- Compost made with plant residue and animal manure and enzymes made with fallen fruits are critical in providing low cost organic fertiliser. Blending traditional methods with new technologies to support the conversion brings both ecological and economic benefits to farmers.
- **Product Diversification** – After experiencing high market risk in large scale monocultures of crops, Puhan Cooperative encouraged its members to diversify their production.
- Diversification also spreads out planting and harvesting seasons, making intensive farming manageable for smallholder farmers.
- Smallholder farmers in Puhan Cooperative usually grow 3-5 different crops. Industrial apple can serve as a secure base income crop, to be supplemented with other high value crop such as peaches and persimmons to achieve a well-balanced production mix.



SUSTAINABILITY MANAGEMENT AND TRACEABILITY

It is essential to have a sustainability management system in place to ensure the quality, safety and sustainability of industrial apples produced meet Austria Juice's sourcing requirements. The following are some recommendations:

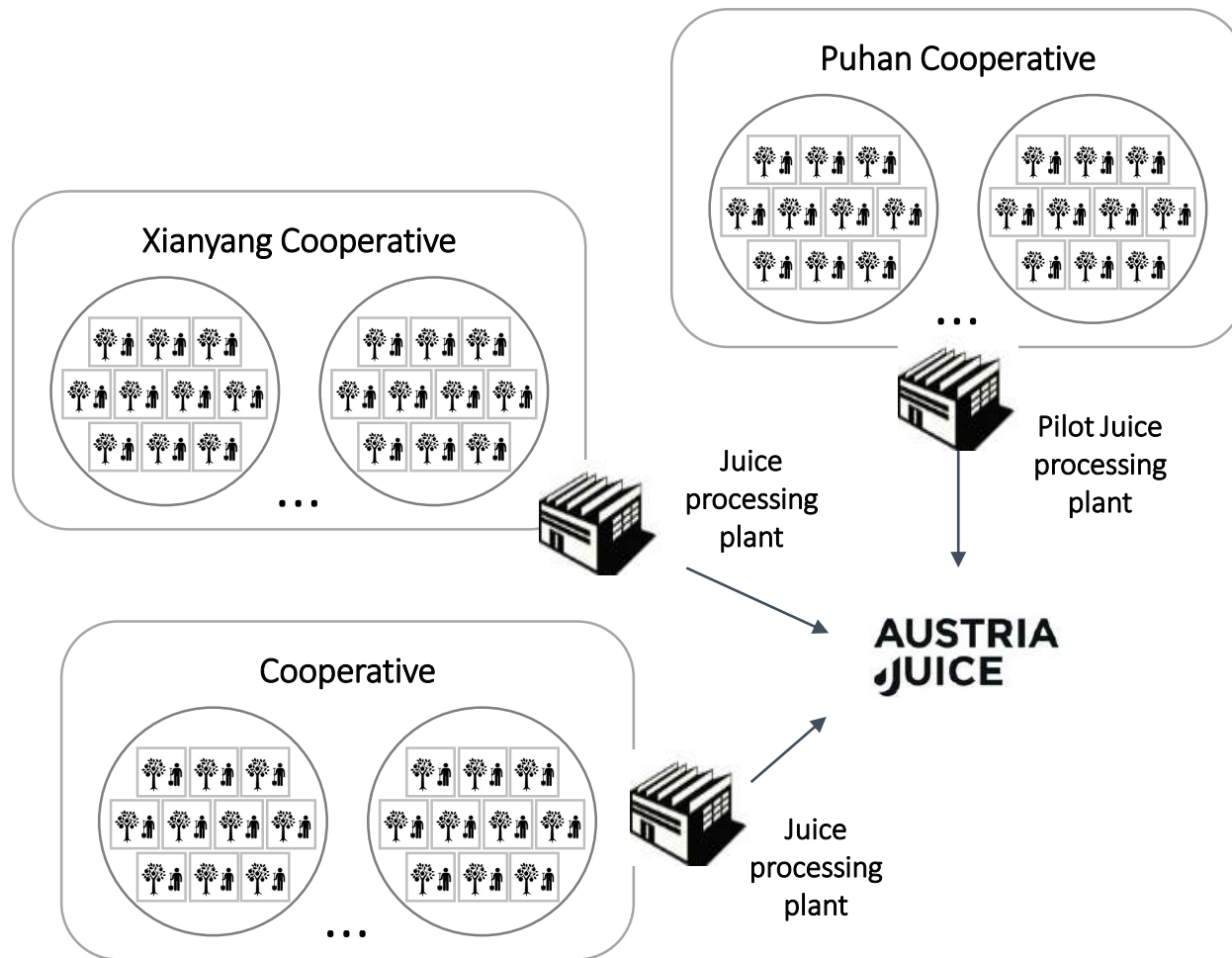
- Develop farming guidelines and sustainability standard based on Puhan's current practice and Austria Juice's requirements.
- SAI, GLOBAL G.A.P. and local Chinese standards can be used as a reference.
- Develop a checklist for smallholder farmers to do self-assessment, covering all stages of production from pre-harvest activities such as soil management and plant protection to post harvest produce handling, packing, storing and delivery.
- Identify control points and develop compliance criteria.
- Implement a traceability system that capture production information and allows products to be traced back to the orchard.
- Develop an interface for farmers on a mobile app that allows integration with Puhan's existing farm management database.
- Facilitate regular exchange among farmers from within (and from other) producer mutual aid group to share farming practices, resolve technical issues and cross check each other with respect to implementation of sustainability standard.
- Capture continuous improvement that feeds into collective knowledge shared among all farmers.
- Regular inspection by Austria Juice and independent verification by third party to be arranged by Austria Juice.



A Sustainability Management System is essential to ensure product quality, safety, sustainability

SCALING UP THROUGH A DISTRIBUTED MODEL (PHASE 2)

In Phase 2, a distributed network model is proposed to scale up the production of industrial apples for Austria Juice. *Sustainapples* will support local communities in Xianyang and Yongji to setup cooperatives following Puhan's model developed in Phase 1 and supply industrial apples or AJC to Austria Juice exclusively. The concept of distributed juice processing will also be introduced in Phase 2.



Distributed juice processing

- Through a joint venture with local cooperatives and Austria Juice, *Sustainapples* will setup community juice processing plants to produce AJC and NFC juices for Austria Juice as local industrial apple production scales up.
- Guaranteed supply of apples locally.
- Reducing transportation cost.
- Localised traceability management.
- Profit sharing with local cooperative.
- Job opportunities for local community.
- Pomace utilised as animal feed locally.
- Each plant processes up to 6,000 tonnes of apples/year and producing 1,000 tonnes of AJC/year.
- Sourcing from 1500 mu of local smallholder orchards (500 households).
- Quality check by Austria Juice.
- A pilot plant to be setup in Yongji with Puhan to test the concept.

A scalable system to increase sustainable apple production and social impact

SUMMARY OF KEY SERVICES PROVIDED BY SUSTAINAPPLES

The following key services are delivered by the Sustainapples to strengthen the value chain and support cooperatives:



Credit,
Leasing,
Insurance

- Provides wholesale credit to cooperatives to support microfinance.
- Provides funding to support machinery leasing.
- Provides agricultural insurance to cooperatives.



Agri-inputs
Sourcing

- Handles the sourcing of farming inputs to negotiate for lower bulk order prices and support cooperatives with group purchasing.



Technical
Advisory

- Provides systematic education for farmers along with technical support on the field.



IT & Traceability
System

- Provides an online app to capture farmer's data, farming inputs used and production data to support traceability



Distributed Juice
Processing Plant

- Manages the development of community-level juice processing plants
- Coordinates apple collection and delivery



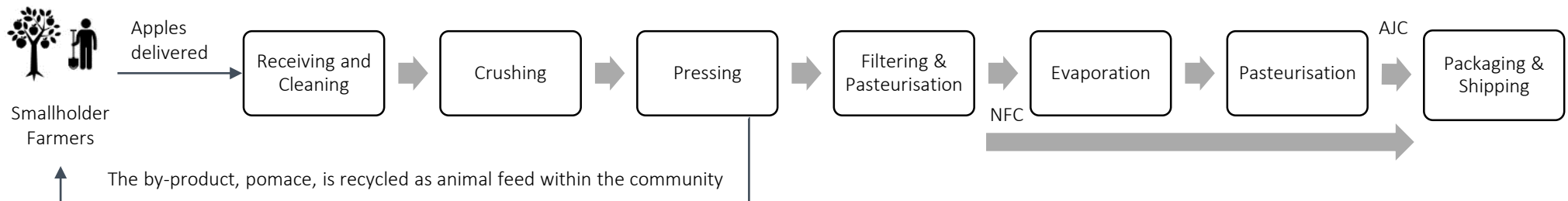
Sustainapples provides services to support cooperatives and strengthens value chain

COMMUNITY APPLE JUICE PROCESSING PLANT

To guarantee long-term supply and to engage the local community, it is recommended to setup decentralised processing plants in partnership with local cooperatives and bring processing closer to the source. With technical start-up support from Sustainapples, the village-scale facilities will utilise state-of-the-art technology to meet international quality standards. Standard operating procedures and quality control processes will be designed according to Austria Juice's requirements.



Process Flow at Community Apple Juice Processing Plant



Product Line

- The village-scale facility will produce both Apple Juice Concentrate (AJC) and Not-From-Concentrate 100% Apple Juice (NFC) for Austria Juice exclusively.
- As there is a market trend towards the growth of NFC juices, the community processing facility can be a first step for Austria Juice to launch into NFC production in China.

Site Selection Considerations

- Proximity to smallholder apple orchards
- Water and energy sources and usage
- Recycling of water and by-products
- Easy access to main road



MARKETING & COMMUNICATION

VALUE PROPOSITION

- Austria Juice's collaboration with local farming cooperatives can help cement its position in China and abroad as a company that positions its business model around sustainable and equitable development.
- With downstream customers becoming more aware of safe and sustainably produced products it is important for Austria Juice to ensure that AJC produced in China are also produced sustainably as in their operations in Europe.

The value proposition of this business proposal is three-pronged:

Economic

- Through a long-term contract and commitment to establishing similar models in Xianyang, Austria Juice can ensure a stable supply over the longer term.
- For farmers and cooperatives it ensures a stable income for the long term.

Environment

- Through Puhan's commitment to circular farming methods and the removal of plastic waste, as well as improved farming methods that can be gained from an exchange of expertise between Austria Juice and Puhan, ecologically friendly production methods can be ensured.
- Through a sustainability standard that is developed in consultation with all parties, Austria Juice and Puhan can be known as the first movers in developing a model suited to China's smallholder farming.
- By ensuring traceability in the apples used Austria Juice can reassure customers that products are safe.

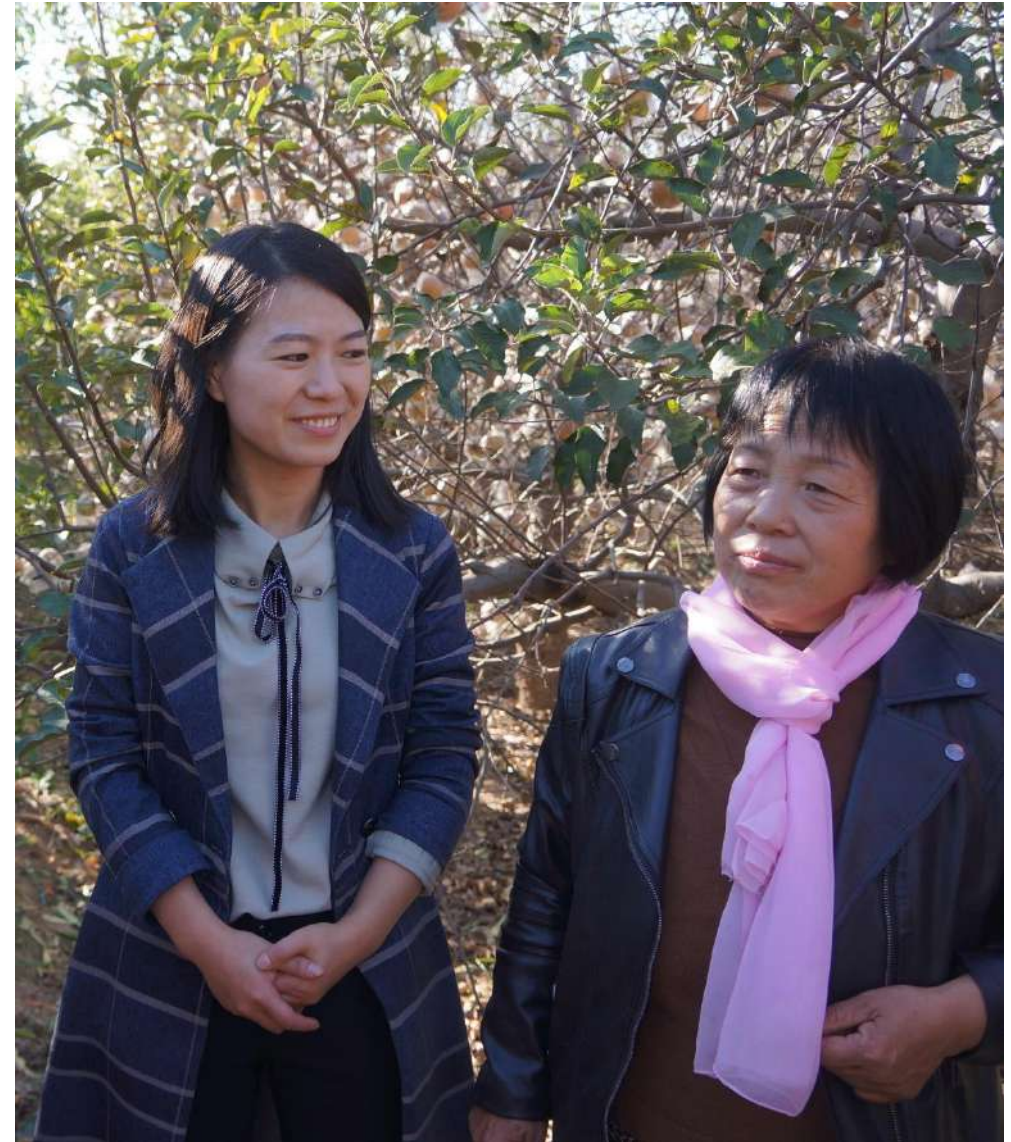
Social

- By driving a sustainability standard that includes social indicators, Austria Juice can be known as a company that strives to achieve a level above and beyond just environmental sustainability.
- Puhan Cooperative's model that improves social cohesion in rural communities and retains and attracts young people to stay in the countryside can become an important model for China and the world in solving urbanisation and ageing problems.

Austria Juice can position itself as a global company that prioritises sustainable and equitable development

BRANDING

- Austria Juice, as well as the new entity Sustainapples, can take on a brand that focuses on the three pillars of Economic, Environmental and Social value described in the previous page.
- Because the business model focuses on improving many of the elements in the UN's Sustainable Development Goals (SDGs), it is suggested that the business try to leverage the positive image of the SDGs in any marketing campaigns.
- It should also leverage the relationship with local cooperatives to promote the company as one that values local collaboration, which will be received positively by local and central governments.
- As a company that strives to improve rural community living, smallholder farmers in Xianyang and beyond will be more inclined to supply to Austria Juice beyond contractual agreements.



Positive brand identity raises supplier and customer loyalty

LOGO – MEANING & VALUES

- For the new venture Sustainapples, it is suggested that a logo be designed that represents its values of sustainable and equitable development.



- The ring around the apple represents the colours and commitments in the UN's Sustainable Development Goals as well as a circular farming model
- The leaves at the top is nod to the leaves from the Puhon Cooperative's logo.
- The land is composed of elements from Agrana Juice's logo
- The other elements in the logo – the farmhouse and sun represent the commitment to cooperative development in the Xianyang and Yongji region.

**AUSTRIA
JUICE**



COMMUNICATION PLAN

- In order for the business to gain support from local communities, the government, and international buyers, the company must develop a communication plan that is multi-pronged and consistent.
- Consider also the hiring dedicated staff for government relations and community outreach.

Government Support

- Government support is essential in the success of Sustainapples and its ventures. Constant communication and consultation with the Yongji and Xianyang governments are essential for the successful development of the Puhon Cooperative, Xianyang Cooperative and other ventures of Sustainapples.
- Staff from Puhon Cooperative in the venture must make every effort to show to the Xianyang government its achievements in Yongji, and seek their support in identifying and organising a similar cooperative in Xianyang.
- By ensuring that the objectives of the business is in line with local government's rural revitalisation strategy as well as the SDGs, and highlighting the potential for Xianyang to become more prosperous and prominent, the business will have a higher chance to garner support from the government.

Community Outreach

- To ensure trust from local communities, inclusive outreach activities should be offered to the public.
- Outreach activities could include:
 - Demonstration farms and information sessions for the training of apple farmers
 - Factory tours for families
 - University tie-ups in R&D and internships
 - Other promotional activities such as shows and market days.
 - Promotional activities on wechat and local media

Global Customers

- Emphasise SDGs and local cooperative engagement
- Emphasise safe and sustainable supply chain throughout
- Consider developing a Sustainapples seal to be used on approved sustainable apple products

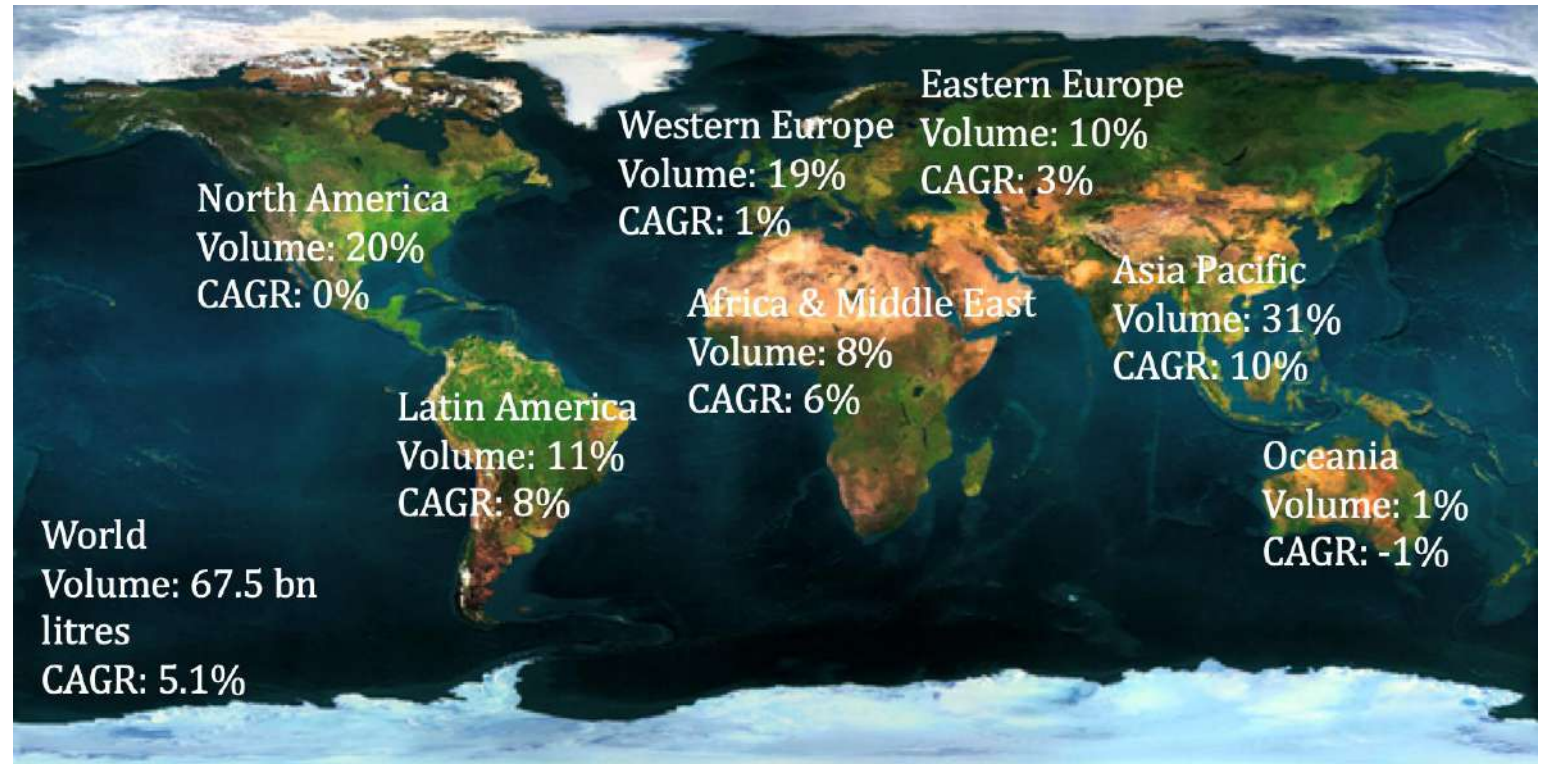
Ensuring the success of Sustainapples through government support and community outreach



MARKET OPPORTUNITIES

NEW MARKET OPPORTUNITIES

- There is an opportunity for Austria Juice in the future to capture new market opportunities in global and domestic markets, and begin production of NFC (not from concentrate) juices or other juice concentrates for the domestic and Asia Pacific markets that are seeing a rise in demand.
- The compound annual growth rate (CAGR) of the global juice industry for the years 2011-2016 has been 5.1% with the highest growth occurring in the Asia Pacific region followed by Africa and Latin America.
- The emerging markets are providing vast opportunities for the juice industry as these markets are keen on following mature markets' consumer behaviour patterns and buy global brands.



Phase Two of the venture could include developing new products for growing Asia Pacific markets

GLOBAL AND DOMESTIC CONSUMPTION TRENDS

Global Consumption Trends

- With the growing affluence and awareness of healthy living, there is a growing demand for healthier substitutes to carbonated soft drinks.
- The global organic food market is projected to increase at a CAGR of more than 14% between 2016 and 2021. With an increased awareness of the health benefits of organically grown and produced goods, there is a drift towards organic fruit juices.
- The health trend is further strengthened by the lure of superfruits that are rich in antioxidants, (such as berries, grapes, cherries and pomegranates).
- Emerging superfruits include goji berries, açai, acerola, mangosteen, and noni. Because these fruits are less “mainstream,” they tend to capture consumers’ interest, particularly of those that are keen on trying new flavours and taste sensations.
- Fruit juice is a mature market, manufacturers battling to grow sales are keenly focusing on product differentiation and developing juices that go beyond just tasting good and providing general health benefits. Based on buyers’ changing taste and preference, juice suppliers need to equip themselves with an agile mechanism to pilot diversification into exotic fruits, vegetables and herbs that are nascent in the market.

Chinese Consumption Trends

- In China specifically, sales of fruit/vegetable juice in 2012 reached a total of US\$16.6 billion. The market for fruit juice in China is positioned for good growth, with an healthy compound annual growth rate (CAGR) of 10.1% from 2007 to 2017. Chinese consumers prefer orange flavours for their fruit and vegetable juices, with mixed flavours gaining attention as consumers believe that these combinations offer more nutrition.
- Other popular juice flavours in China include grape, pomegranate, apple, and carrot with the possibility of persimmon, pear and peach.
- A new diverse segment of healthy and exotic juices will provide the vehicle for growth in the mid to long term. For instance, China’s rock sugar pear juice, or chrysanthemum and honeysuckle, which have properties of reducing the body’s internal heat, have the potential to become popular in other parts of the world.



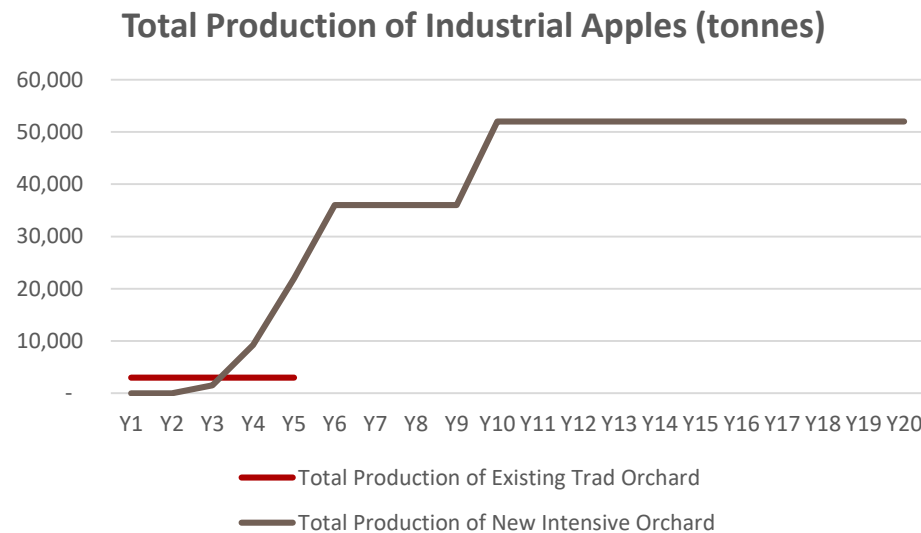
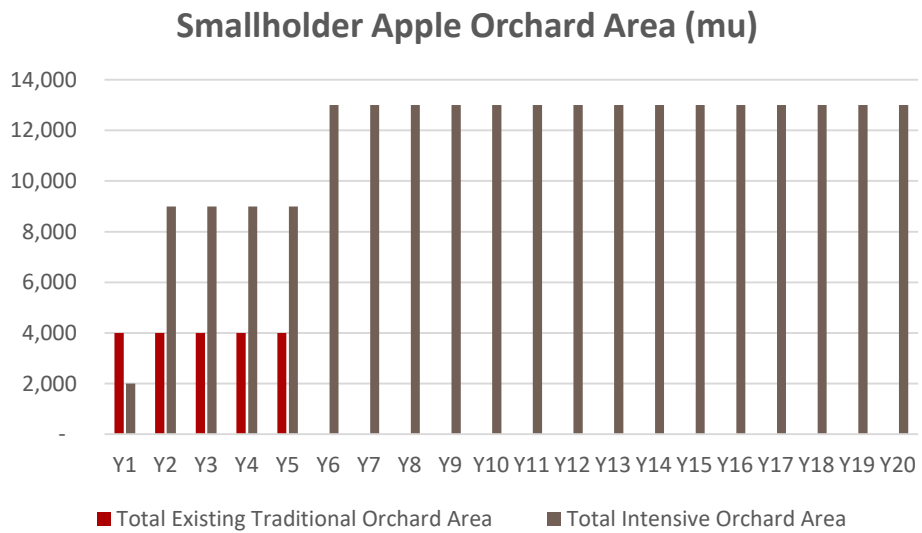


FINANCIAL ANALYSIS & INVESTMENTS

PHASE 1: STABLE SUPPLY OF SUSTAINABLE APPLES TO AUSTRIA JUICE

- The financial analysis covers only Phase 1. Direct contract between Puhan and Austria Juice generates stable and sustainable supply of industrial apples to Austria Juice over next 20 years.
- 13,000 mu of new intensive orchard will be established by Year 6 (2024)
- Austria Juice will receive 3,000 tonne of industrial apples starting from 2019 and increase gradually to 52,000 tonne by Year 10 (2028).
- Austria Juice will receive RMB 4.5million and 2.7million in interest (1%) over 10 years if they provide funding for microfinancing for farmers and early payment respectively.

Metrics for Puhan over 10 years	Results
Avg Gross Margin (%)	11.8%
Avg Net Profit (%)	3.8%
Avg Return on Capital Employed	5.8%



13,000 mu and 52,000 tonnes of industrial apples to be provided by Puhan

PHASE 1: KEY FINANCIAL ASSUMPTIONS

Revenue Assumptions

Sale of industrial apples by Puhan: 5% commission retained by Puhan

- Industrial apple price of existing orchard: RMB 800/tonne
- Industrial apple price of new intensive orchard: RMB 1400/tonne

Group purchase of agri-inputs: 10% commission retained by Puhan

Microcredit interests: For Puhan: 2% from initial planting loan, 5% from early payment loan; for Austria Juice: 1% from microfinancing, 1% from early payment loan

Operating Assumptions

- Puhan cooperative to organise smallholder farmers to produce industrial apples for Austria Juice under direct purchase contract
- Farmers to finance 80% initial planting (3% interest) and production (6% interest) expenses through microcredit
- Austria Juice to provide technical advice and third party verification

Scale of Operations

Phase 1: Direct Purchase Contract

- Y6: New intensive orchard expands to 13,000mu.
- Y6: 1.3 million trees
- Y10: Producing 52,000 tonnes of industrial apples for Austria Juice
- Involving 3000-3600 smallholder farmers, each having 3-5 mu of orchards

Cost Assumptions

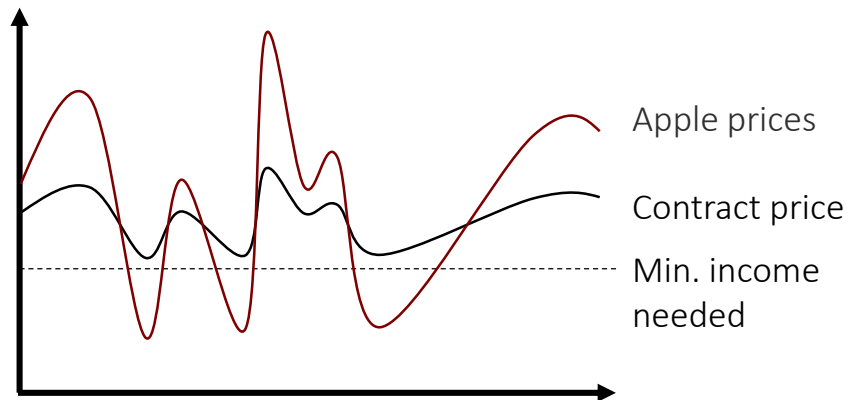
- 38 staff in Puhan management team
- Base salary of RMB 500 in Y1, and RMB 1000 from Y2 onwards
- Transportation cost is calculated as an indirect cost for Puhan (to be negotiated with Austria Juice)
- Machinery & Equipment CAPEX estimated at RMB 500,000 (10 year total)
- Inflation rate of 7.5%
- All figures are in RMB

Investment Requirement

- A total of RMB 106,664,525 of microcredit funding is needed to establish 13,000 mu of intensive orchard
- Loan from Austria Juice, Puhan Cooperative, banks and impact investors may be considered
- 9-12 months early payment from Austria Juice to be used to finance 80% of production expenses

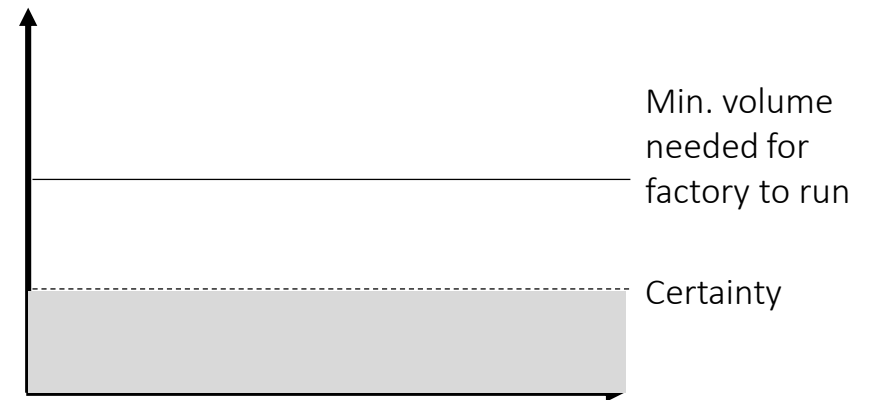
PHASE 1: DIRECT PURCHASE CONTRACT – A WIN-WIN COMBINATION

Benefits for Puhan co-operative



- Apple prices fluctuate greatly from year to year
- This means some years farmers do not earn enough to make ends meet (“minimum income needed”)
- Contract prices allow for more stable prices and allow farmers to plan forward

Benefits for Austria Juice



- Austria Juice sources from the open market today
- Direct contracts help Austria Juice meet minimum volume needed for factory production run
- Further, partnership allows for AJ to engage Puhan on sustainability and traceability goals

PHASE 1: P&L OF A SMALLHOLDER ORCHARD

The following table shows the profit and loss of a unit of smallholder orchard with trees planted in Y1. 80% of initial planting expenses in Y1-Y3 will be financed through microcredit to be repaid in Y5-Y8 by the farmer with an interest rate of 3%. Full production comes in Y5 with a yield of 4 tonnes/mu.

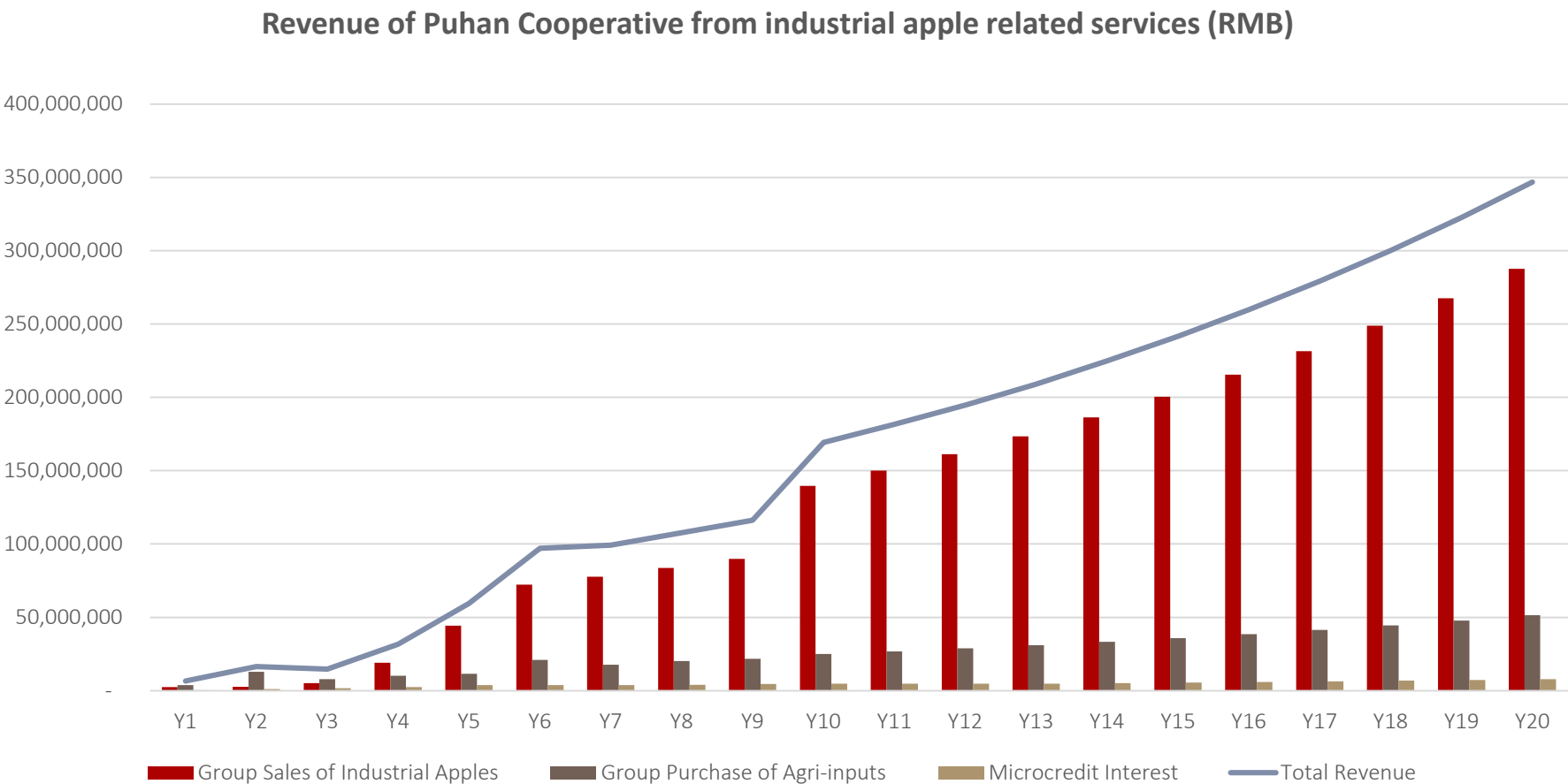
Purchase price of RMB 1400/tonne is assumed. The actual price will be calculated as a function of AJC price, production cost, industrial apple price and freshmarket apple price and to be negotiated between Austria Juice and Puhan. It is suggested that Austria Juice to guarantee a minimum income of RMB1000/mu during the year when harvest is impacted by natural factors or weather events.

Smallholder Intensive Orchard (1 mu)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
	Initial planting			Half prod	Full production					
Fruiting year		Y1 Fruiting	Y2 Fruiting	Y3 Fruiting						
Yield (tonnes/mu)	-	-	0.75	2	4	4	4	4	4	4
Cost Fraction	40%	60%	80%	80%	100%	100%	100%	100%	100%	100%
Revenue (RMB)	-	-	1,213	3,478	7,479	8,040	8,642	9,291	9,987	10,737
Direct Expenses (Cost of Revenue)										
Seedlings (one time)	1,000									
Land Preparation and Planting (one time)	800									
Land Leasing	500	538	578	621	668	718	772	830	892	959
Agri-inputs	400	645	925	994	1,335	1,436	1,543	1,659	1,783	1,917
Irrigation	80	129	185	199	267	287	309	332	357	383
Labour	400	645	925	994	1,335	1,436	1,543	1,659	1,783	1,917
Other	200	323	462	497	668	718	772	830	892	959
Total Direct Expenses	3,380	2,279	3,074	3,305	4,274	4,594	4,939	5,309	5,707	6,135
Gross Profit	(3,380)	(2,279)	(1,861)	174	3,205	3,446	3,704	3,982	4,280	4,601
Gross Margin			-153%	5%	43%	43%	43%	43%	43%	43%
Total Interest	81	136	210	368	362	325	289	255	274	294
Cooperative Comission	-	-	61	174	374	402	432	465	499	537
Net Income	(3,461)	(2,415)	(2,131)	(368)	2,469	2,718	2,982	3,262	3,507	3,770
Net Margin			-176%	-11%	33%	34%	35%	35%	35%	35%

Farmers who start from Y1 are expected to gain a net income of RMB 3,770 per mu by Y10

PHASE 1: REVENUE OF PUHAN COOPERATIVE

Revenue of Puhan Cooperative from direct purchase contract, group purchase of agri-inputs and microcredit interest.



Puhan Cooperative to reach a revenue of 169 million in year 10 from all services related to industrial apples

PHASE 1: CONSOLIDATED P&L OF PUHAN COOPERATIVE

The following table shows the profit and loss from industrial apple production for Puhan Cooperative. Revenue comes from group sales of industrial apples to Austria Juice, group purchase of agri-inputs and microcredit interest.

Payment for transportation cost of industrial apples to Austria Juice's Xianyang factory, which amounts to 6% of purchase price, to be negotiated between Puhan Cooperative and Austria Juice.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue (RMB)	6,506,240	16,516,860	14,666,170	31,748,570	59,510,322	97,158,824	99,182,802	107,747,819	116,225,630	169,230,105
Less: Cost of Goods Sold	(5,700,000)	(14,061,000)	(12,012,722)	(27,283,945)	(52,457,228)	(87,602,101)	(89,727,551)	(97,651,632)	(104,975,505)	(155,027,918)
Gross Profit	766,240	2,455,860	2,653,448	4,464,625	7,053,094	9,556,723	9,455,251	10,096,187	11,250,125	14,202,187
Gross Margin	12.4%	14.9%	18.1%	14.1%	11.9%	9.8%	9.5%	9.4%	9.7%	8.4%
Less: Indirect Costs										
Administrative Wages and Salaries	(228,000)	(490,200)	(526,965)	(566,487)	(608,974)	(654,647)	(703,745)	(756,526)	(813,266)	(874,261)
General and Administrative	(30,000)	(64,500)	(69,338)	(74,538)	(80,128)	(86,138)	(92,598)	(99,543)	(107,009)	(115,034)
Training and Technical Support	(48,000)	(103,200)	(110,940)	(119,261)	(128,205)	(137,820)	(148,157)	(159,269)	(171,214)	(184,055)
Transportation to AJ factory	(270,000)	(290,250)	(468,028)	(1,369,632)	(3,004,806)	(4,651,439)	(5,000,297)	(5,375,319)	(5,778,468)	(8,972,677)
Depreciation	-	-	(10,000)	(10,000)	(10,000)	(30,000)	(30,000)	(30,000)	(50,000)	(50,000)
Profit before Interest and Tax	230,240	1,507,710	1,468,178	2,324,707	3,220,982	3,881,828	3,480,454	3,675,530	4,330,169	4,006,160
Less: Interest	(78,080)	(319,820)	(508,134)	(748,139)	(929,879)	(950,204)	(913,346)	(914,870)	(963,916)	(938,952)
Less: Tax	-	-	-	-	-	-	-	-	-	-
Net Income	152,160	1,187,890	960,043	1,576,568	2,291,103	3,046,475	2,567,108	2,760,660	3,366,252	3,067,207
Net Margin	2.3%	7.2%	6.5%	5.0%	3.8%	3.1%	2.6%	2.6%	2.9%	1.8%
Average Gross Margin (%)	11.8%									
Average Net Margin (%)	3.8%									

Puhan Cooperative to reach a net income of 3 million in year 10 from all services related to industrial apples

PHASE 1: USES AND SOURCES OF FUNDS

Microcredit funding of RMB 66,545,174 is needed for Y1-Y4 (9000mu) and RMB 40,119,351 is needed for Y6-8 (4000mu) to finance 80% of the expenses for establishing new intensive orchards. The remaining 20% will be financed by farmers themselves. Farmers will pay a 3% annual interest rate for the microcredit, and the interest 1% will be paid to the funder and 2% will be retained as management fee by Puhan.

If the microcredit funding comes from Austria Juice, it can be paid back as apples by Y5 onwards. Terms to be negotiated with Puhan.

CAPITAL STRUCTURE & INVESTMENT REQUIREMENTS

Categories	Initial Capital Requirement	Additional Requirements									
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Machinery & Equipment	-	-	-	100,000	-	-	200,000	-	-	200,000	-
Microfinance for Planting	-	5,408,000	23,994,000	18,637,920	18,505,254	-	15,527,767	10,469,758	14,121,826	-	-
Microfinance from Early Payment	-	2,400,000	2,580,000	2,773,500	8,268,728	29,935,876	33,076,900	35,557,667	38,224,492	56,272,292	63,805,703
Total (Required Investment)	-	7,808,000	26,574,000	21,511,420	26,773,982	29,935,876	48,804,666	46,027,425	52,346,318	56,472,292	63,805,703
Source of Capital Requirement	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Equity	-	-	-	-	-	-	-	-	-	-	-
Loan	-	7,808,000	26,574,000	21,411,420	26,773,982	29,935,876	48,604,666	46,027,425	52,346,318	56,272,292	63,805,703
Retained Earnings	-	-	-	100,000	-	-	200,000	-	-	-	-
Total (Required Investment)	-	7,808,000	26,574,000	21,511,420	26,773,982	29,935,876	48,804,666	46,027,425	52,346,318	56,272,292	63,805,703

A total of RMB 106,664,525 of microcredit funding is needed to establish 13,000 mu of intensive orchard



SOCIAL IMPACT & STRATEGIC PARTNERSHIPS

CREATING ECONOMIC, ENVIRONMENTAL & SOCIAL VALUE

Introduction

Conventional economic theory and textbook finance is centered around creating growth in economies and profits. As Milton Friedman wrote in his essay in 1970: "The Social Responsibility of Business is to Increase its Profits". This notion is firmly engrained in the current corporate and financial world. However in light of current resource constraints there is a growing urgency for new business models that do not contribute to the degradation of the environment and the society.

Creating economic, social and environmental value

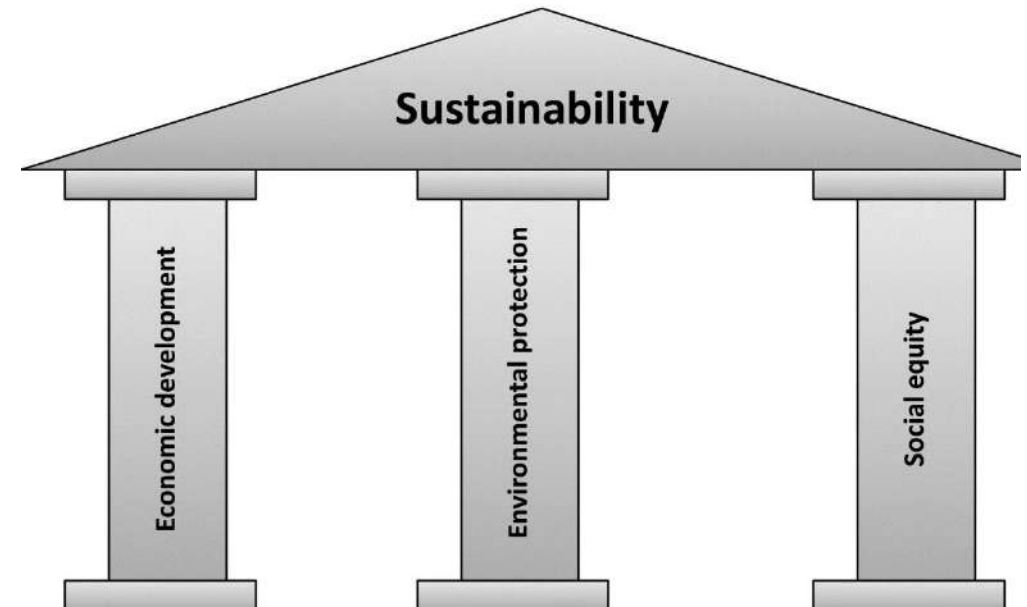
Sustainable business models do not need to come at a cost to economic development.

The business plan suggests a model whereby economic value is created at the same time as social and environmental value. The protection and rejuvenation of orchards as well as raising community living standards present a much more compelling business model that can be sustained well into the future.



SOCIAL OBJECTIVES OF THE VENTURE

- The business plan suggests a collaboration that not only provides economic benefits for both parties but also provides social and environmental benefits for the community and the area.
- In line with the Chinese government's rural revitalisation strategy, the venture will raise farmers' incomes, make rural life more attractive for people, and improve food safety as well as health and wellbeing for rural communities.
- As China is also committed to the UN's Sustainable Development Goals (SDGs), this plan aims to fulfil the many criteria in the SDGs including poverty reduction, ensuring healthy lives, creating jobs and equitable growth, responsible production and consumption, and reversing land degradation.



“Sustainable development” is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

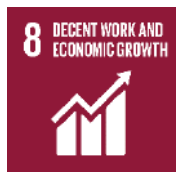
– quote by Gro Harlem Brundtland, Chair of the World Commission on Environment and Development (WCED) in 1987

SUSTAINABLE DEVELOPMENT GOALS

The following outlines how the proposed business plan aims to fulfill a number of the UN's SDGs.



- Puhan Cooperative and new entities such as Xianyang Cooperative and Sustainapples can boost economic opportunity for farmers in Shaanxi and Shanxi provinces.



- Bulk purchasing of inputs through cooperatives can reduce costs for individual farmers and improve productivity.
- Contract relationship with Austria Juice provides stable income that can help farmers weather unexpected financial shocks.
- Microfinance through the cooperative can also help farmers become more productive by investing in inputs and machinery.
- Improvement in skills through training and education can help farmers become more productive and enterprising.



- Cooperative organisations can help rural communities produce safer food, enrich lives through community services and help provide safeguards in times of sickness and accident, and enabling better access to healthcare and education.
- Traceability system for produce enables more accurate tracking of sources to ensure that safety standards are met



- Sustainable farming methods such as circular farming at Puhan and that which will be adopted by Xianyang Cooperative will contribute to less agricultural waste and environmental impact.



- Reducing plastic used in the wrapping of apples for fresh produce will contribute to less pollution
- Proper management of inputs at the organisations will lead to a reduction of harmful chemicals for the environment and the soil
- Circular farming methods and producing enzymes using agricultural waste from apple production can reduce greenhouse gas emissions



- Sustainable farming methods utilised by Puhan Cooperative and Xianyang Cooperative will contribute to soil rehabilitation
- Commitment to replacing old orchards can help revitalise the farmland



- Strategic partnerships between Austria Juice, local cooperatives, government, as well as international organisations can foster exchange of best-practices in achieving SDGs.

ACTION PLAN FOR SOCIAL IMPACT ACTIVITIES

It is recommended that the partnership focuses on the following Short Term and Long Term plans to achieve its social objectives. Short Term Action Plan can be taken up for implementation from the 1st year and Long Term Action Plans should be implemented in the following 3-5 years.

☐ Short Term Action Plan



☐ Work with Puhan Cooperative and third party certification body like SGS on a sustainability standard focusing on environmental and social factors suited to China

☐ Work with Puhan Cooperative to establish demonstration farm and training for Xianyang farmers

☐ Organise family education tours to Austria Juice's factory to build stronger bonds with communities

☐ Invite local universities in Xianyang to participate in R&D on apple production and land revitalisation

☐ Provide funding for microfinance at Puhan and Xianyang Cooperative

☐ Long term Action Plan



☐ Build traceability infrastructure and integrate into system at Puhan

☐ Build a farmer's training institute in Xianyang area drawing upon expertise from local govt, universities and AJ

☐ Explore tie ups with a reputed supplier for agricultural inputs

☐ Building of pre-schools, community centres, healthcare centres, elderly care centre etc – to be funded through financial surplus of the cooperative

SOCIAL IMPACT MEASUREMENT

Below are some suggested targets for the business' social objectives:

S.No	Impact Item	Outcome	Indicator	Targeted change in 3-5 years*
1	Economic	Increased income level of farmers	Avg annual Income of farmers	Increase by 2% over inflation rate
2	Farmers Age	Reduced average age of farmers	Ratio of no. of young people / overall farming population	Increase by 5% points every year
3	Production of sustainable apples	Increased production of sustainable apples	% of sustainable apples in the area	Increase by 20% YOY
4	Usage of chemicals	Chemical fertiliser + Pesticide usage to reduce	Amount of chemicals used per mu	Reduce by 20% YOY
5	Overall improvement of Livelihood among farming communities in the area	Higher education levels, longevity of life, lower disease / sickness rate	% of kids going to university, avg of population in the area, avg annual medical expenses	10% increase, 1 year YOY, reduction by 10% YOY

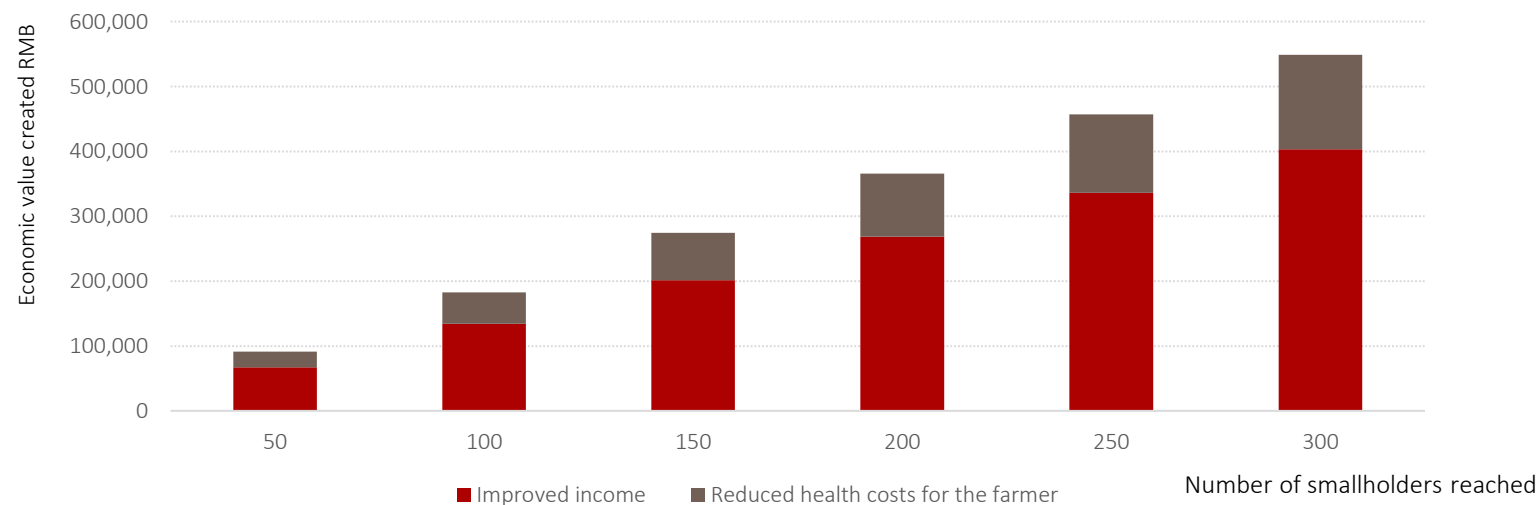
*Targets to be developed with Yongji and Xianyang governments and local cooperatives

IMPROVING HEALTH AND WELLBEING

- The current Per Capita Disposable Income of Rural Households is 10,645 RMB per year¹. In phase 2 of the business plan the target is to grow this income with 2% per year above inflation in the next 5 years. This will create a total extra 1,334 RMB of income per household over that period.
- The current Per Capita Health Care Expenditure of Rural Households is 970 RMB per year¹, which is almost 10% of the disposable income. In phase 2 of the business plan the target is to reduce chemical use, attract younger people to come back, improve health and thereby decrease healthcare costs by 10% in the next 5 years. In addition to the health benefits of higher productivity of the farmer, which we do not calculate here, this amounts to savings of 485 RMB per household in this period, which can be spent on or invested into the farmers business, thereby creating value.

¹ Source: National Bureau of statistics of China

These two simplified examples show that economic value can be created through improving livelihood and health. The value added increases with the number of smallholder farm households that join the co-operative. This calculation is based on some of the social impact targets that are defined in the previous page.



Improving health and reducing sickness are just as important as improving income

STRATEGIC PARTNERSHIPS

The new venture should focus on forming strategic partnerships with the following organisations to garner support and capture market opportunities in the future years.

Xianyang Government – for their support in setting up the Xianyang Cooperative and other initiatives

Universities – for support in joint R&D and for outreach to younger generation of agriculturalists

Agri-inputs companies – to provide affordable and safe chemicals for use in the orchards

Yongji Government – for support in the cooperative direct sourcing model and distributed juice processing pilot in Puan

Certification companies – for designing and certifying a sustainability standard suited to China

NGOs – to provide social services such as education and healthcare programmes at cooperatives

Machinery suppliers – to purchase machinery for the cooperative farmers

Downstream distributors – global companies for export, and large domestic companies like Alibaba/JD to distribute any new products to the Chinese market

Banks – to provide funding for cooperatives' operations such as microfinance and other services

SUSTAINAPPLES SEAL

In the future, Sustainapples could provide a sustainability seal that can only be applied to all apple products that satisfy the following farming, social, and environmental requirements.



Sustainapples Seal

Farming Systems

- Implement circular farming
- Minimise waste and emissions from the farming system
- Reduce the dependency on non-renewable resources and close nutrient loops in production systems
- Promote product diversification
- Promote smallholder farming
- Avoid resource intensive large-scale industrial system
- Develop local farming inputs and seed varieties

Social Development

- Improve farmers' livelihoods
- Create social cohesion
- Create social benefit for cooperative members such as elderly and child care, retirement pension, etc.
- Preserve cultural heritage
- Embrace cultural diversity
- Retain young talent

Environmental Sustainability

- Fulfill *China Pollution Free Agricultural Product Standard*
- Preserve & become stewards for biodiversity
- Protect the genetic diversity of crops and improve breeds of plant varieties and livestock suited to agroecological production
- Improve the health and resilience of the ecosystem
- Maintain and enhance water, air quality and soil fertility
- Contribute to reversing the effects of human-induced climate change

Only products that comply with sustainability standards can use the Sustainapples seal

VALUABLE LESSONS FROM PUHAN COOPERATIVE

Key success factors from Puhan Cooperative can be applied to other cooperatives in Xianyang. These include the following:

- **Community organisation** is fundamental to bring out the intrinsic values of rural communities and restore rural vibrancy.
- Cooperation among smallholder farmers goes beyond agricultural production. Mutual support in daily living and the delivery of **public services** such as pre-school education and elderly care goes a long way in building community cohesion which in turn enhances cooperation in agricultural production.
- Gaining understanding and approval from village committees and villagers is necessary to develop village-level services that **fulfill local needs**.
- **Community organisers and producer mutual aid group leaders** play a meaningful role in accompanying smallholder farmers and address their needs. They collect first hand information to help the cooperative understand service demands and minimise the risks associated with microfinance.
- **Education and talent development** are crucial to grow and retain talent in rural areas.
- **Technical training** and the organisation of learning circles are fundamental to lead the transition to sustainable farming and build a robust farming sector.
- Smallholder production can achieve economies of scale by taking advantage of **supporting services** such as **microcredit**, **group purchasing**, **group sales** and **mechanised farming**.



Insights from Puhan Cooperative can serve as a reference for other cooperatives in Xianyang



IMPLEMENTATION ROADMAP

IMPLEMENTATION PLAN (1/2)

The plan proposes implementation of the various business activities in two stages.

Focus Area	Phases	Phase 1				Phase 2						
		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Business Model and Governance	Phase 1: Direct contract with Puhan Cooperative											
	Phase 2: Establishment of Sustainapples											
	Phase 2: Scaling supply with Xianyang Cooperative											
	Phase 2: Juice concentrate at the source											
Financial	Secure finance budget for the direct contract with Puhan Cooperative											
Operations	Puhan and Austria Juice partnership implementation stage:											
	1. Utilise 4,000 MU from existing apple orchards											
	2. Allocate 2,000 MU to establish new apple orchards											
	3. Allocate 7,000 MU to establish new apple orchards											
	4. Conversion of the existing 4,000 MU into intensive orchards											
	Technical training for farmers											
	Enhancement of current Puhan Farm Information System for traceability											
	Phase 2: Juice concentrate at the source processing:											
	1. New facility set-up											
	2. Capability development and training											
	3. Processing of AJC and NFC											
	4. Application of by-product to circular farming											

IMPLEMENTATION PLAN (2/2)

Focus Area	Phases	Phase 1				Phase 2							
		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
Sales & Marketing	Communication of the new partnerships to all stakeholders												
	Government liaison for their support in Sustainapples												
	Setting up of Xianyang Cooperative												
	Building awareness among the Puhon and Xianyang Cooperative members												
	Capability development / training to the Cooperatives members												
	Community engagement activities												
Community and Environmental Impact	Collaborate with University on R&D and training												
	Organise family education tours to AJ's factory												
	Build farmer's training institute in Xianyang												
	Explore tie up with a reputed supplier for organic input material												
	Building of pre-schools, community centre, healthcare centre, elderly care centre at Xianyang Cooperative												

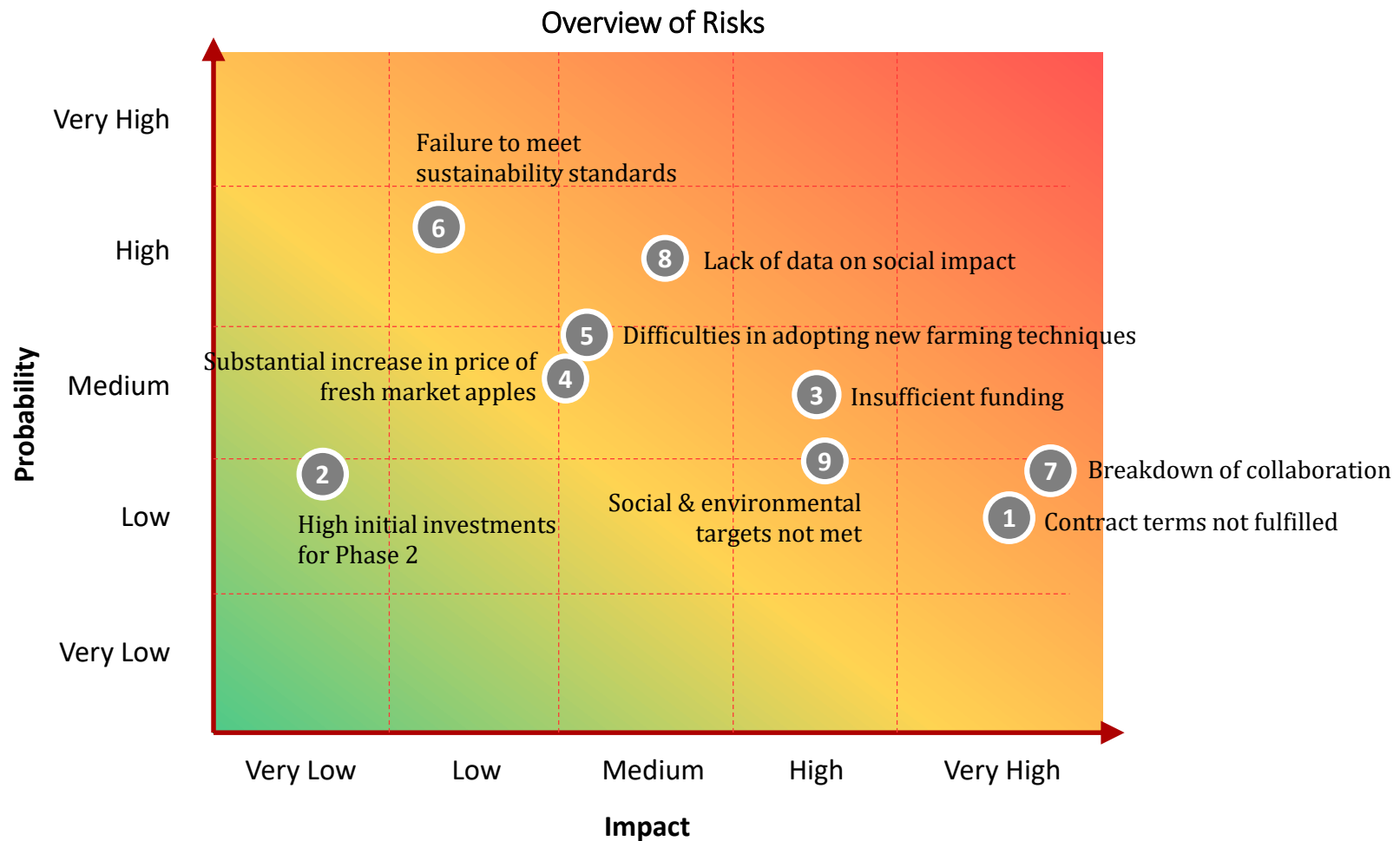


RISK ANALYSIS & MITIGATION

RISK ANALYSIS

This business plan describes how organised farmers can work together with Austria Juice to create a continuous, reliable, traceable and sustainable supply of apples to benefit both the farmer cooperatives and Austria Juice. This also supports the goals of the Chinese government in developing the rural areas into a flourishing environment and increase sustainable productivity of agricultural products.

This section identifies the risks of not achieving the goals in this plan. It also outlines the measures to be taken to mitigate these risks. Three categories of risk are identified: financial, operational and external stakeholders & reputational.



RISK MITIGATION (1 / 2)

	Risk	Mitigation
Financial	① One of the parties fails to fulfill the contract terms and conditions	Both parties to discuss terms and set realistic targets and commitments. Hold regular evaluation meetings to assess progress and discuss difficulties. Make back-up plans to supply from other sources if weather conditions are bad. Farmers should diversify their crops to spread risk.
	② High initial investment to finance decentralised juice processing model (Phase 2)	Implementation in phases, starting with a pilot project
	③ Insufficient funding to support both the agricultural and social development activities	Ensure that any activities are self-funded or ensure there is a committed fund or source of funding for the activities.
	④ Substantial market price increase of fresh market apples which makes it more appealing for the farmers to sell their product at fresh markets	Adjust premium accordingly to satisfy farmers. Encourage farmers to diversify their crop from the beginning to have both industrial and higher value produce.

	Risk	Mitigation
Operational	⑤ Difficulty in adopting new farming techniques	Conduct intensive training program. Joint technical training from Austria Juice, Puhon and universities. Adapt European methods to local conditions.
	⑥ Failure to meet quality and sustainability standard	Develop a quality and sustainability standard that fits the China agricultural best-practice. Follow standards of practice with technical assistance from Austria Juice and SGS. Regular meetings with Puhon to discuss implementation. Set up demonstration farms and regular training for farmers.

RISK MITIGATION (2 / 2)

	Risk	Mitigation
External Stakeholders & Reputational	7 Breakdown in collaboration between stakeholders	Transparent communication on interests of all stakeholders.
	8 Lack of quantifiable data on social impacts	Educate farmers on data collection. Improve data collection process. Make the data collection part of the contract between the cooperative and Austria Juice.
	9 Social and environmental targets are not met	Measure and evaluate progress on a yearly basis. Adjust plan or targets when necessary.



Transparency and openness are key to preventing many risks



CONCLUSION & RECOMMENDATION

CONCLUSION & RECOMMENDATION

The current middlemen sourcing model for Austria Juice does not allow apples to be traced or their production methods verified. Moreover, farmers are increasingly turning to higher value crops or selling their apples to the fresh market in the face of decreasing AJC prices. There presents an opportunity for apples to be grown more sustainably and farmers to be better integrated into the modern value chain.

The proposal in this plan suggests a viable way for Austria Juice to partner with Puhan Cooperative to source apples that are traceable, produced with lower chemical and labour inputs, produces less plastic waste and promotes circular farming.

Sustainability for Puhan includes not only environmental factors but community and social factors as well which lead to better lives, higher productivity, and attract young people to the countryside. For China where smallholder farmers make up the majority of farms, better incomes, education and training, as well as healthcare and elderly care are also important considerations.

The Chinese government is pushing for plans to revitalise rural communities and promote self-sufficiency. This and their commitment to the UN's Sustainable Development Goals (SDGs) offer synergies with Puhan's model, as well as Austria Juice's ambitions of creating a sustainable food value chain.

The recommendation is for Austria Juice to take the lead in setting a sustainability standard that is suited to China's smallholder farming. In this endeavour they would be best served by the expertise Puhan has accumulated in organising farmers and ecological farming over 20 years.

Sustainapples can be an entity that fosters the creation of more communities like Puhan that are productive and sustainable, starting with the Xianyang Cooperative.

It can endeavour to expand to other areas, other product lines, and contribute to community-building such as joint R&D with universities, training and outreach activities, and become a model for European-Chinese cooperation that will benefit all stakeholders from communities to customers and consumers.





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