

Tajikistan

**Preparatory Survey Report for
BOP Business on licorice
Production in Tajikistan.**

(Summary)

February 2016

Japan International Cooperation Agency (JICA)

Cokey Systems Co., Ltd

INTERNATIONAL DEVELOPMENT CENTER OF JAPAN, Inc.

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1. Outline of the Survey

1.1 Background and purpose of the survey and development goals

Republic of Tajikistan Business Preparatory Survey for Licorice Production (BOP¹ Business Promotion), hereinafter referred to as “the Survey,” is a project which aims to reduce poverty of local farmers by encouraging farmer organizations as well as production and sales of licorice roots. This project has been carried out in Shartuz and Kubodiyon districts, the southernmost part of Khatlon Region which shares the border with Afghanistan, in a three-year time-frame from March 2013.

Tajikistan used to be a country with the lowest GDP among all the former Soviet Union republics. While suffering from economic turmoil after the nation’s independence in 1991 and a civil war from 1992 for five years, Tajikistan’s GDP shrank to one third, and the society was driven to the verge of starvation. A peace-making process took place from 1997 to 2000, and poverty reduction became the top priority of reconstructing the nation, along with restoration of civil order and economic recovery. Although the poverty rate improved from 81 per cent in 1999 to 32 per cent in 2014 thanks to the peace restoration and economic recovery, poverty reduction still remains the most crucial agenda of today.

Although Tajikistan’s public sector including the government finance and infrastructures saw some gradual development with the aid of international agencies and bilateral support of other countries, on the road to economic recovery still lie many challenges, from a surge in private sector to creation of new enterprises, which are key to growth in the market-oriented economy, and the reality is that not many foreign capitals have flown in until now.

Under these circumstances, Cokey Systems Co., Ltd., a Japanese company (hereinafter referred to as “Cokey Systems”), took a special notice of licorice naturally found in Tajikistan, went to observe and research the site, and finally founded AVALIN, a joint-stock company, with a Tajik partner in 2009.

Licorice is used as a medicinal herb around the globe since ancient times, and it still is being traded internationally as a raw material of pharmaceutical products. Glycyrrhizic acid, an active pharmaceutical ingredient manufactured from licorice roots, is one of the important pharmaceutical products. Cokey Systems is the single largest domestic supplier of crude Glycyrrhizic acid (hereinafter referred to as CGA, its content specification being not less than 25 per cent), which is a primary extract of licorice roots, and it lives up to the increasing demand of the pharmaceutical industry for stable supply.

Cokey Systems was originally procuring the raw materials from China, but as depletion of the resources by overexploitation was becoming a great concern, it diversified the supply chain and expanded into Central Asia, Russia and Mongolia starting in the late 1990s. From the perspective of production efficiency, however, CGA production base was moved to countries of origin of licorice.

¹ abbreviation of “Base of the Pyramid”

With Tajikistan chosen as the first partnership country for the joint venture programme, the overseas CGA production was finally in full swing.

Cokey Systems established a joint stock company AVALIN in Tajikistan in March 2009, mutually founded with a capital of US\$60,000, whose 51 per cent of stocks are held by the Tajik side and 49 per cent by the Japanese side. AVALIN's main line of business is production of CGA, and it presently hires 50 employees. Because land is state-owned and licorice is subject to natural resource protection, Cokey Systems entered into Memorandum of Understandings (MOU) with the Tajik government, to receive support for smooth operation of the business.

AVALIN received a business permit to collect licorice roots in December 2010, and started production of CGA in a factory built in the south of Khatlon, using licorice roots excavated from a virgin licorice habitat of 3,000 hectares (of which the current excavation right goes to 2,000 hectares) provided by the Tajik government, carefully unearthed by 150 directly hired local farmers. The condition for Cokey Systems is to purchase all the CGA manufactured there. AVALIN was designed with the annual manufacturing capacity of 3,000 tons of dried licorice roots and 300 tons of CGA, and it is expected that 200 million yen of initial capital spending as well as 72 million yen of running cost can be earned back within eight years with an expected annual revenue of 230 million yen, calculated at the point of fifth year in operation.

Furthermore, Cokey Systems established Cokey Central Asia & Caucasus (hereinafter referred to as CCAC), a 100-percent owned Japanese subsidiary, in October 2011. CCAC assists AVALIN's general administrations, supporting the management of the CGA plant facility lease, which is leased out by Cokey Systems to AVALIN, real-estate management of AVALIN headquarters in Dushanbe, leasing of farm equipment, procurement of CGA intermediates, inspection of exported CGA manufactured by AVALIN, and distribution of materials.

All in all, this Survey pursues the betterment of living of local farmers by strengthening employment opportunities and raising the income levels, through encouraging them to organize a union near the AVALIN plant, leasing them farm equipment, training them to harvest licorice roots, and selling the harvested crops to AVALIN, all in one cycle of a long-lasting business.

Provided that a mutually agreeable trade price is set between AVALIN and local farmers participating the Survey, and that CGA manufactured at AVALIN can withstand export competition, this business model will be sustainable in the long term as long as there is a demand for licorice products in the international market.

When excavating licorice roots, rather than taking the whole root out of the ground, part of it must be conserved in the soil for regeneration and re-cultivation of the plant in a cycle of three to five years, a period necessary to maintain its quality. As the MOU was renewed between the Tajik government and Cokey Systems on October 24, 2015, an additional allocation of licorice habitat of 1,000 hectares was reconfirmed by the government, and a concern with the lack of licorice roots as raw material was mitigated.

As growth of licorice roots was confirmed and the licorice cultivation pilot project (ongoing from September 2013) proved to be successful as part of the Survey, it moved into full-scale expansion of the cultivation area from the beginning of 2015. However, in order to continue with the cultivation, a financing method still needs to be considered to secure a certain scale of licorice field and a corresponding amount of money necessary for it.

It is noteworthy that the Survey seems to have enhanced the autonomy of local farmers and brought about changes in attitudes toward the business after three years in operation. It is highly anticipated that this very change evolves into a driving force of the people to better their living in the future, while accommodating changes in the market, utilizing the business scheme and experiences.

1.2 Survey area

The Survey area, 20-Solagii Istiqloliyat, Kubodiyon district and Jura Nazarov, Shartuz district, lies at the southernmost part of Tajikistan's farming zone, bordering with Afghanistan.

AVALIN'S CGA plant is just 12 kilometers away from the border; surrounded by desert, this area is home to wild licorice and looks over the Kofarnihon River (a tributary of the Pyanji river) on the side. Its location is best suited for the primary processing of licorice roots, but depending on the situation in the neighbouring country, it is crucial to pay attention to the safety of staff members and Japanese delegates that are involved in the operation of AVALIN, needless to say, including the plant.

The infrastructure in Tajikistan is still at an unsatisfactory state, and basic social services such as water supply and healthcare are not readily available. Rural areas, in particular, are facing a greater challenge in overcoming poverty. Underdevelopment and aging of the infrastructure are a few of the main obstacles to making economic progress. A major example would be 20-Solagii Istiqloliyat of Kubodiyon district and Jura Nazarov of Shartuz district by the Afghan border, where it is worse off economically and socially, and the infrastructure is extremely poor.

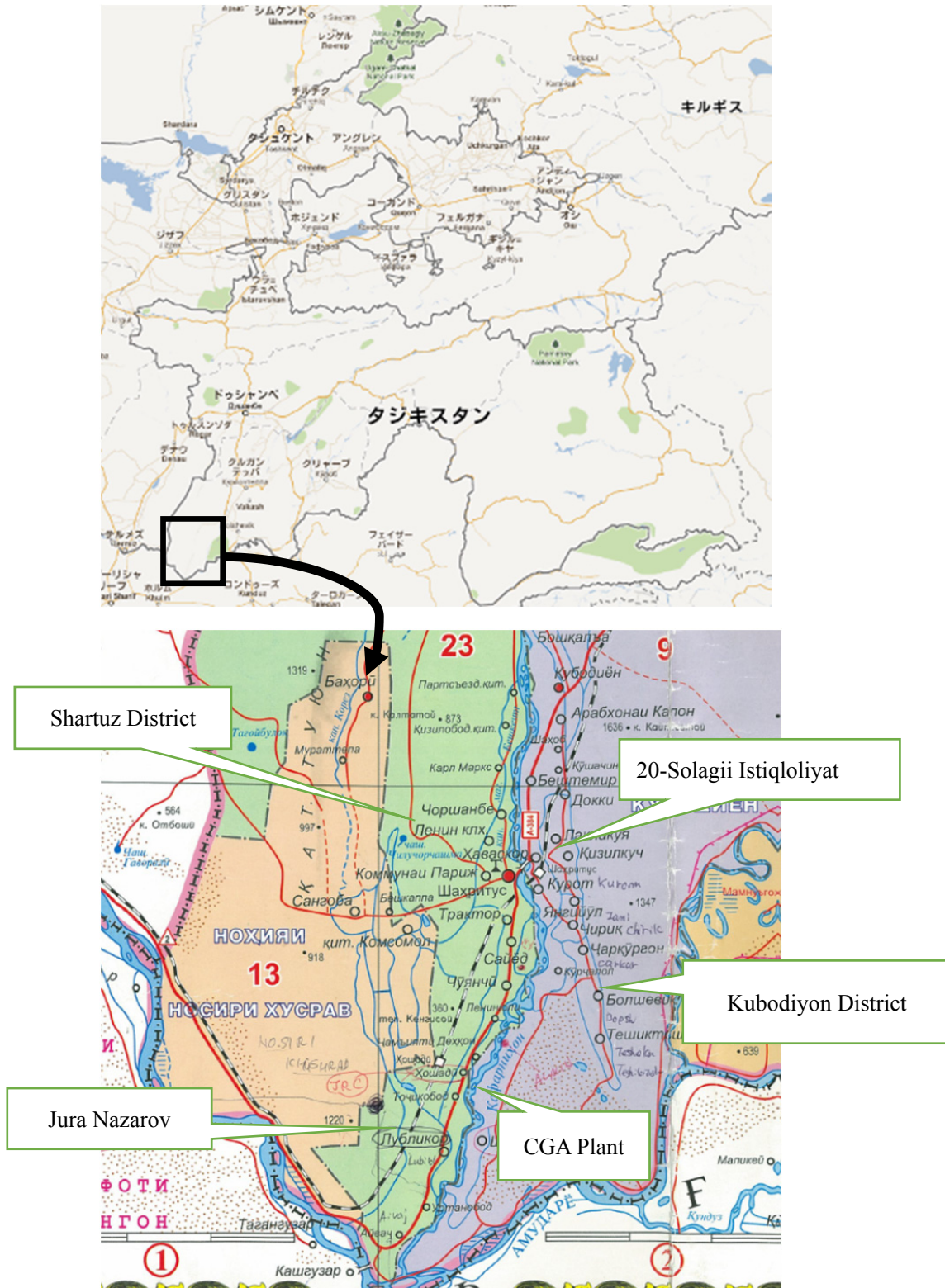
This region is a major production area of cotton, one of the pillars of Tajikistan's agriculture, and farmers make a living based primarily on cotton cultivation. However, as cotton exports are vulnerable to changes in the international market, making their income unstable, the Tajik government is searching for crops other than cotton for production expansion as a way of risk aversion.

There are no truly private businesses in this region other than food produce and daily commodities traded in local markets. While it is desired to have private business startups for improvement of the living conditions, lack of funds, technologies and expertise, many adult males choose to migrate to places like Russia, Kazakhstan and the Middle East to work and support the family back home.

AVALIN's licorice production and processing business is drawing more attention as a successful model of creating new jobs in the agricultural field under this kind of environment.

1.3 Survey Area Map

Figure 1: Survey Area Map



2. Survey items, targets and duration

2.1 Survey items and targets

The Survey was implemented for 3 years starting in March 2013 with a clear target on improvement of the living standards of Tajik farmers, and it was done through dispatching of experts from Japan to build business models, give technical guidance on licorice roots production, run a pilot project on licorice cultivation, and lease out agricultural equipment.

The most important objective of the Survey was to improve the life quality of farmers by raising the income levels through expansion of employment opportunities in the south of Khatlon Region, namely 20-Solagii Istiqloliyat of Kubodiyon district and Jura Nazarov of Shartuz district

The Survey entailed the four following programmes: ① Pilot project of licorice production, ② Technical guidance on licorice production, ③ Licorice pilot cultivation and expansion of the area, and ④ Farm equipment leasing, except for the transportation of licorice from collection points to the plant and a tractor for the work in the field, which were taken care of by AVALIN.

① Pilot project of licorice production

The project encouraged local farmers to organize a group for licorice production, and they were put into licorice cultivation pilot project for farmer groups. Each group cultivated and sold licorice roots to AVALIN, which became a routine later on.

② Technical guidance on licorice production

Experts of licorice production provided technical guidance to the farmer groups on matters such as root division, cultivation techniques (changed from seeding to root cutting), fertilizer application, excavation, collection, and transportation.

③ Licorice pilot cultivation and expansion of the area

After an experimental cultivation of licorice, AVALIN shared the result with farmers and expanded the artificial cultivation. (As of November 2015 during the 11th on-site inspection, it was confirmed that the pilot cultivation was successfully executed and that 27 hectares of artificial licorice field were newly added. For the time being, 10 hectares of monthly expansion is planned and further expansion continues to be a task)

When	Transition of cultivation area of artificially grown licorice
September 2013 (implementation of experimental cultivation)	0.5 hectares (Pilot block within AVALIN's property)
May 2015	4 hectares
September 2015	11 hectares
November 2015	27 hectares

④ Farm equipment leasing

While farmer groups were supposed to rent farm equipment such as tractors from AVALIN, leasing of equipment became rather limited after AVALIN decided to do the root transportation from the collection centre to the plant and conduct tasks which require tractors.

Items ① to ③ were executed as planned. As for item ④, leasing of agricultural equipment became limited after AVALIN took over the domain which involves tractors, but as it will be explained in “3.1 Feasibility of the business,” AVALIN continues to provide local farmers the services of the items ① to ④ through purchase of licorice roots for CGA production.

2.2 Duration of the Survey

The Survey duration is from March 2013 to March 2016, with tasks involving dispatches of experts to build business models, giving guidance on licorice production, management and marketing, opening up a collection centre, running a pilot licorice cultivation/ artificial cultivation, loaning out farming funds, leasing out farming equipment, and making use of solid/liquid wastes, all of which were done to raise income of local farmers in the target regions by providing job opportunities.

From March 2015 onward, with the fluid influence of the Afghan situation, the ninth and 10th missions in Khatlon were not feasible due to safety concerns, and those dispatched were obliged to stay in Dushanbe, conducting hearings in AVALIN head office and visiting concerned government offices. During the 11th mission, the team made a day trip to the site in the south of Khatlon, conducted seminars to local farmers and inspected the CGA plant, licorice root pilot cultivation block, virgin licorice field, and licorice artificial cultivation site. From the security control perspective, communication with AVALIN was limited to emails and online teleconferences, with the on-site tasks condensed to the minimum and part of it moved to Japan.

3. Feasibility of business and judgement of its commencement

3.1 Feasibility of the business

AVALIN has been operating the plant built in the south of Khatlon since September 2011, using licorice roots as raw materials, which are cultivated by 150 directly contracted farmers from a wild licorice field of 3,000 hectares (of which the excavation right granted to 2,000 hectares at the time being) that were attained from the Tajik government.

At present, raw materials come from directly contracted farmers harvesting the 2,000 hectares of land to which AVALIN holds the excavation rights, while local farmer groups make up 15 per cent of the total, and the rest, at times of shortage, is supplied by others in the same trade.

The amount of raw materials from the non-contractual local farmers is expected to rise as an additional 1,000-hectare land was granted in October 2015 and as the pilot artificial cultivation project started to expand to full scale.

It is fair enough to say that AVALIN's production business of licorice has succeeded within the Survey period based on the fact that the purchase of licorice roots from local farmer groups has become part of the business routine.

3.2 Judgement of business commencement

The business will shift into the phase of full-scale development and enter into its maturity stage after the Survey completion in April 2016. The table below shows the relations between the Survey and AVALIN's licorice production business.

Figure 2: Main Timeline of Business Preparatory Survey for Licorice Production (BOP Business Promotion)

Milestones of Tajikistan Business Preparatory Survey for Licorice Production (BOP Business Promotion)						
AVALIN starts harvesting 1500 out of 3000 ha land by directly contracted farmers in Sep 2011.	1) The Survey starts 2) Selection of business locations (20-solagii istiqloliyat and Jura Nazarov) 3) land expands to 2000 ha	1) Stake-holders agreement 2) non-contract local farmers grouping completes	1) local farmers start excavation 2) local farmers excavate virgin roots 3) 1st sales of roots (Dec 2013-Mar 2014) 4) on-going technical guidance	1) 2nd sales by local farmers (Jan 2015-Apr2015) 2) Tech guidance continues 3) Root cutting helps artificial cultivation area expansion 4) Pilot cultivation succeeds 5) AVALIN plans to expand 10ha each month 6) Renewed MOU adds 1000ha and total of 3000ha land provides enough raw materials incl. artificial cultivation	1) The Survey completes	1) The Phase II business continues 2) Dushanbe MAG plant construction and its CGA supply from AVALIN to the MAG plant are planned
	Mar-May 2013	Jun-Oct 2013	Nov 2013-Feb 2014	Mar 2014- Nov 2015	Dec 2015-Mar 2016	Apr 2016-
Sep 2011	Mar 2013- Mar 2016, 3 year-period of Tajikistan Business Preparatory Survey for Licorice Production (BOP Business Promotion)					AVALIN continues the BOP business

Considering the fact that the below requirements (1) to (8) were already achieved during the Survey, no major issue is expected to arise in the future in terms of business profitability (in AVALIN's viability in operation and local farmer groups' development) as well as its continuity.

(1) Permits

With the MOU renewed on October 24, 2015 between the Tajik government and Cokey Systems, the remaining 1,000 hectares of virgin licorice habitat was included in a total of 3,000 hectares of wild licorice habitat, which sufficiently covers the required amount of licorice roots including artificially grown ones as raw materials. There is no concern for all the business models including that of AVALIN in terms of permits.

(2) Operating environment

Because of the political situation in the neighbouring Afghanistan and the movements of Islamic extremists, Cokey Systems has some limitations with sending people to the site. However, because Cokey Systems, AVALIN management team and the technical staff members are in close contact using an online teleconference tool and emails on a daily basis, no deadly obstacle has ever appeared in the phase of transitioning into the full-scale business under the current collaboration scheme. Neither has it been influenced by governmental policies nor legislations related to foreign investments.

(3) Infrastructure

In terms of the social infrastructure, electricity supplied by Barki Tojik, a state-owned electricity company, has been unstable in voltage in the south of Khatlon, affecting the CGA production. However, it is expected to be improved in Spring 2016 or later as part of the electric transmission enhancement programme. Other than that, even though a challenge remains in overland shipping time until reaching Iran and Turkey, where ports for loading CGA onto ships are located, it is not as fatal either.

(4) Strong support and commitment of the parent company

AVALIN already plays a critical role in the global CGA procurement strategy laid out by Cokey Systems, the parent company. Strong financial support is given on need basis, and all the CGA produced by AVALIN continues to be purchased by the Japanese parent company Cokey Systems, which is secured with a contract.

(5) Collaboration with business partners

If the business used cooperatives such as Jamoat Resource Centre² for transactions, non-contractual local farmers would incur double taxation, which would not benefit the co-op. Thus, it was decided that transactions are to be made not through co-ops but directly to the farmers themselves, which turned them into the business partners. Strong support and collaboration efforts from the local farmers are expected to continue without relying on co-ops, because participating local farmer groups are bound by a sense of belonging, with each group selecting a

² Jamoat Resource Centre was established as a cooperative association for small farmers, and such co-ops exist in certain parts of Tajikistan

prominent Dekhkon farmer as a leader, and because a contact person of AVALIN's CGA plant is building a deeply trusting relationship with the farmer groups.

As one and only Japanese enterprise in Tajikistan and a valuable provider of job opportunities, AVALIN has been highly valued by the Tajik government, Khatlon regional government, officials of Kubodiyon as well as Shartuz districts, and, not to mention, the local communities.

(6) Effect of development on local farmers (non-contract based)

Sales of licorice roots that have already taken place twice (AVALIN being the buyer) proved successful in terms of creating job opportunities and increasing income levels, and such benefits of development are considered to be well sustained.

(7) Human resources necessary for the business

AVALIN has continuously nurtured a skilled management team, operating staff and technical staff, and it also has an individual who is influential in the community as a contact person with local farmer groups.

(8) Business profitability

On top of the licorice roots collected by contract farmers for a secured amount of Tajik licorice production, profitability improved due to an addition of licorice roots purchased from local farmer groups that are organized with strong leadership of prominent local farmers, in terms of raw material procurement. The turnout of CGA production in the year 2015 was 114 tons, which is double the amount of the year 2014, and in 2016, it is expected to rise to 137 tons. The maximum production capacity of the CGA plant is 300 tons per annum when operated twenty-four seven, meaning that it is currently operating at less than half the total capacity. However, this has not stopped the business from being profitable; the revenue turned positive in the year 2015, and it is expected to improve further, with the licorice roots collected by non-contractual local farmers in the BOP business, collection of virgin licorice roots in the authorized land of AVALIN, and those collected from artificially grown roots that are to increase in the future. There is no doubt for the continuity of the business based on the points explained in (4) regarding financial support by the Japanese parent company Cokey Systems, as well as regarding AVALIN's location as a global procurement hub of raw materials, and in (5) regarding the strong support of the Tajik government, regional government and district authorities.

As mentioned above in points (1) to (8), licorice root collection has firmly been placed as part of the supply chain of CGA at AVALIN, and the entire quantity of manufactured CGA is sold to the buyer, Cokey Systems. Reinforcement of the supply chain by installment of a new, high-value-added MAG production plant is to be determined in Phase II, based on careful monitoring of the licorice root collection volume (virgin licorice roots and cultivated licorice roots by AVALIN, as well as licorice roots collected in the BOP business model), the increase and stability of CGA production, world market price of CGA, and lastly the global CGA production strategy developed by Cokey

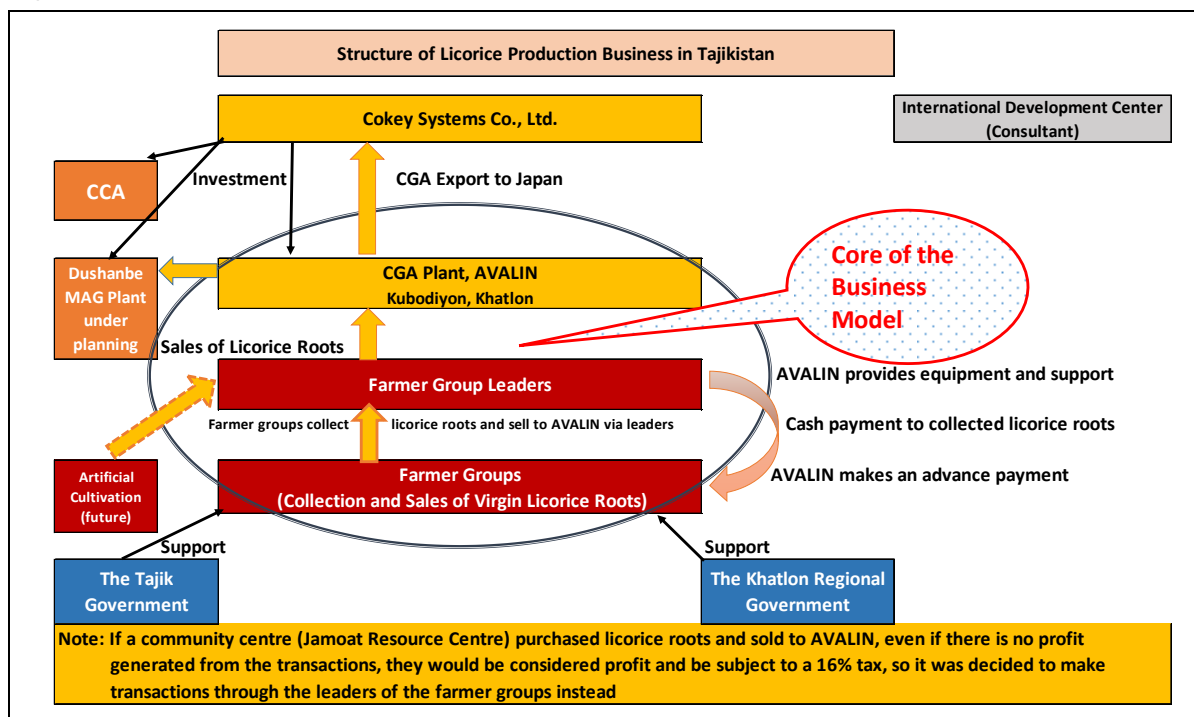
Systems.

As Phase I is now complete, the most crucial and important point in sustaining the business is the maintenance of the relationship between AVALIN and the two successfully organized farmer groups, “20-Solagii Istiqloliyat” and “Jura Nazarov” groups (composed of three sub-groups: Iolomov Saimumin sub-group, Ruslan Khuramov sub-group, Ghafurov Abubakr sub-group) by continuing a “stable, commitment-based relationship with local farmers.” As the structure and foundation are established for continuous development of the concept of the licorice root collection business model, which is the “realization of increased job opportunities and rising income levels by collecting licorice roots and selling them to AVALIN,” it is concluded that the business has already succeeded and a secure foundation of the sustainable business has been established for Phase II and onwards.

4. Business Model

4.1 Business model

Figure 3: Business structure



The above figure is the core structure of the virgin licorice roots collection and sales business model. In addition to this, the artificial licorice cultivation was also implemented based on the successful licorice root pilot cultivation project, which originally started from a perspective of resource protection and securement of raw materials. Yield of licorice roots in the target regions is expected to rise in the future along with the expansion of cultivation of artificially grown licorice roots, with the full implementation of Tajik licorice production business.

5. Concerns with Business Sustainability and Their Countermeasures

5.1 Concerns with business sustainability

1) Excavation rights of the wild licorice habitat

While it was a concern to re-confirm the excavation rights for the remaining 1,000 hectares out of 3,000 hectares of wild licorice habitat (currently the rights are for 2,000 hectares), Cokey Systems, together with AVALIN, lobbied the Tajik government and the regional government, also receiving support from the Japanese government in the negotiation, and the MOU was renewed with a description of re-confirmed granted rights for the remaining 1,000 hectares, dated October 24, 2015. AVALIN is now in the process of searching the right virgin licorice field where a sufficient amount of quality licorice can be expected; an application for the excavation rights for 1,000 hectares of land will be submitted after the search.

2) Expansion of the cultivation area of artificially grown crops within the wild licorice habitat and collection of the artificially grown licorice roots

During the ninth and 10th missions to Tajikistan as part of the Survey in May 2015 and September 2015 respectively, the mobility of the missions was limited to Dushanbe area for safety reasons, forcing them to confirm the progress of the pilot cultivation through interviews without making an actual visit to the site. In the 11th mission, however, the team was able to make a half-day trip to the site, confirming the progress of the pilot cultivation and artificial cultivation, thanks to the full support of the JICA Tajikistan office. The pilot cultivation area which started with 0.5 hectares of land has now expanded to 27 hectares of artificially cultivated area, including the 16 hectares of land which was recently acquired and currently in the process of implantation. At the moment, a mere 30 to 35 per cent of the 2,000-hectare land with excavation rights is sprouted with wild licorice, and because the cultivation of licorice in the non-inhabited area of the recently granted 1,000 hectares is key, AVALIN is planning to increase 10 hectares worth of licorice cultivation area every month. Access to irrigation is also an important, on-going issue that needs to be addressed, especially for the watering that is required for expansion of the artificially cultivated area.

5.2 Continuity of the business for the future

The Survey is a preparatory research for JICA's first collaboration with the private sector in doing BOP business in Tajikistan. The most crucial point of all would be the sustainability of the business model at AVALIN even after the Survey is complete. At the point of completing the Survey, purchase of licorice roots from non-contractual local farmers in Kubodiyon and Shartuz in the off-season of 2015 is making good progress. With the excavation rights granted in October 2015 for the remaining 1,000 hectares of the 3,000-hectare licorice field, Cokey Systems as well as AVALIN need to keep a close watch on the capability of a stable supply of a satisfactory amount of raw

materials, which is AVALIN's annual processing capacity of 3,000-ton licorice roots. What is especially important in continuing the CGA production at AVALIN is to not let the depletion of the resources happen by overexploitation, and to ensure a stable supply of the raw materials at an early stage by expanding the pilot cultivation area of licorice roots, based on calculation of time necessary for the excavated virgin roots to grow back. From this perspective, the level of contribution of the BOP business as part of AVALIN's operations would be key in addressing the future of CGA production.

When doing business in Tajikistan, it is crucial to pay attention to the safety and to gather security information. Since AVALIN's CGA plant was built just 12 kilometers from Pyanji River, which borders the region from neighbouring Afghanistan for purposes of resource use and waste management, not only the situation in Afghanistan but also the domestic situation of Tajikistan need to be watched out for plant operation and visits by the Japanese delegates. During the Survey, and especially starting in April 2015, there have been huge restrictions on the visits by Japanese delegates due to concerns with the Taliban in Afghanistan and ISIL's expanding influence.

Under these social circumstances, Cokey Systems, the parent company on Japanese side, has been encouraging autonomy of AVALIN since the establishment of the overseas affiliate. The fact that the CGA plant has been functioning without any disruption so far is a proof of such efforts, including hiring a president, plant manager and the rest of staff members all locally, and integrating the joint project in the land of Tajikistan. Despite the hardships, AVALIN has nurtured entrepreneurship within the working environment. An example worth noting would be the production of biomass bricks using extracted licorice root wastes.

For the continuity of the business, however, it is important to seek extended support from the Japanese and Tajik governments, especially in terms of safety management, improving the management of AVALIN, maintaining the CGA plant facility and improving technologies, as it is crucial to send supports and technical guidance from Japan.

During the implementation process of the Survey supported by JICA, the licorice root excavation business was carried out successfully: it contributed to the improvement of local farmers' living standards; its artificial cultivation moved into full-scale operation; and last but certainly not least, local farmers and the Tajik government maintained a favourable attitude toward the business. These factors have played a vital role in creating a desirable environment for the continuity of the licorice root business.

