

Socialist Republic of Viet Nam

Lam Dong Province

Socialist Republic of Viet Nam
Collaboration Program with the Private
Sector for Disseminating Japanese
Technology for establishment of a flower
auction market and improvement of
distribution of flower Final Report
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OTA Floriculture Auction Co., Ltd.

OTA Floriculture Research Institute Ltd.

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Map i

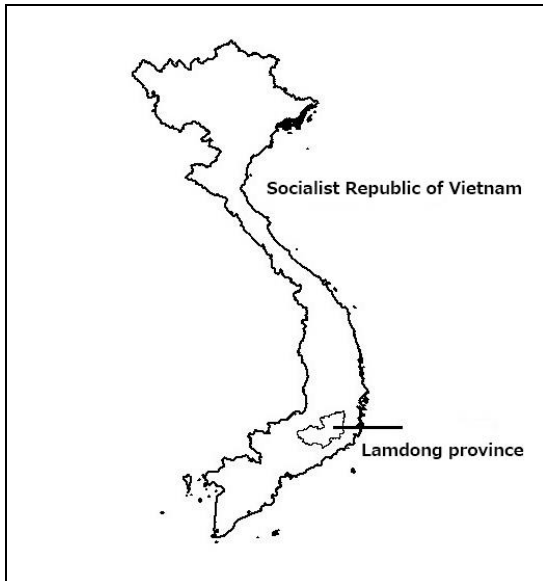


Figure 1: Location of Lam Dong Province in Vietnam¹

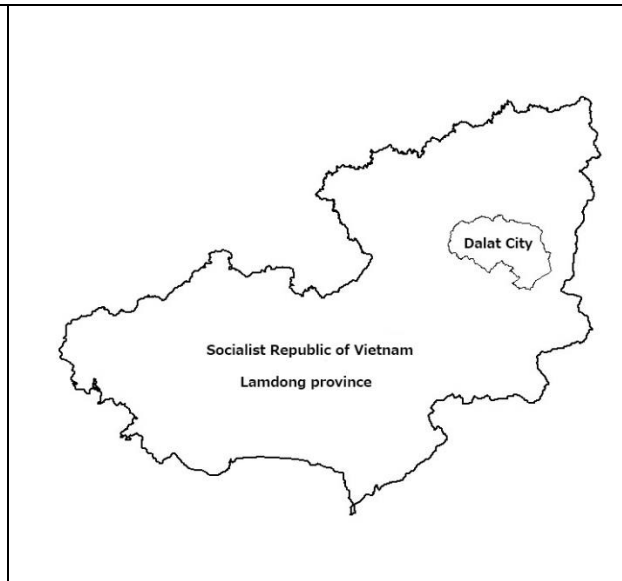


Figure 2: Location of Da Lat City in Lam Dong Province

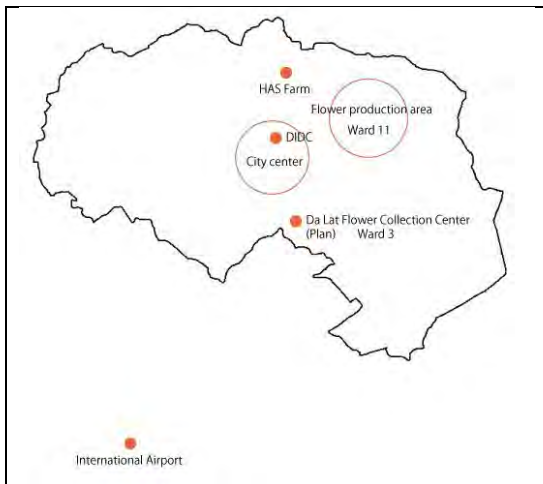


Figure 3: Planned construction site of Da Lat Flower Collection Center in Da Lat City

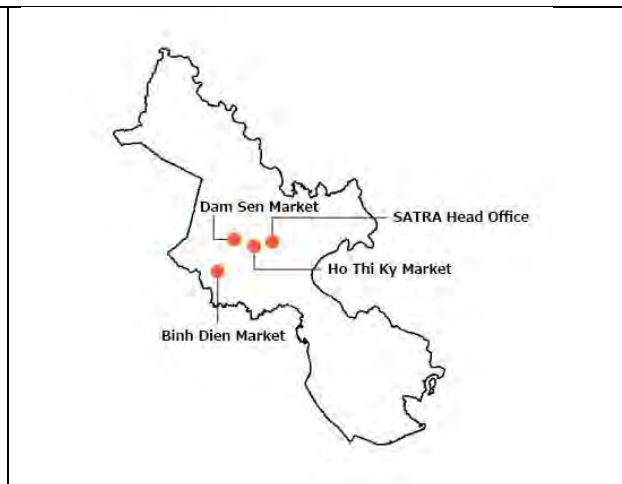


Figure 4: Flower markets in Ho Chi Minh City

¹ Map source of figure 1-4 : DOSM- <http://www.dosm.gov.vn>

Abbreviations ii

Table 1: Abbreviations

Abbreviations and acronyms	The official name
DIDC	Dalat Infrastructure Development Center
SATRA	Saigon Trading Company
JICA	Japan International Cooperation Agency
VND	Vietnamese Dong

Chapter 1 summary

1.1. Summary

1) Background of the project

Lam Dong Province is located in the central plateau area of Southern Vietnam, and suitable for flower production with less temperature changes under a warm tropical but cold-upland climate at 1,500 meters above sea level. As the largest flower production region in Vietnam, although production area has continued to expand, the existence of bottlenecks hinders further growth and development, despite the high potentiality. Those bottlenecks are a) limited access to the market for small-scale flower growers; b) imperfect flower value chain; c) lack of post-harvest management; and d) lack of consciousness of the intellectual property right.

This project is related to “Sophistication of high-value added agriculture by forming a Sextiary Sector” planned by Lam Dong Province, based on “Food value-chain strategy by public-private partnership” as a middle-and-long-term vision of agricultural support between Japan and Vietnam approved by both ministers of agriculture of Japan and Vietnam in August 2015.

2) Dissemination of technology in this project

The technology we will disseminate in this project is not physical equipment or products, but a design of the flower supply-chain and management know-how. More concretely, we set a goal to disseminate design and know-how of collecting flowers from small-scale growers; treat post-harvest management; proper packing and so on.

In addition to the above, through operations at the Flower Collection Center, we aim to promote understandings of advantages of cooperative joint shipment and joint procurement. And against lack of consciousness of the intellectual property right (breeding right) among flower growers, we aim to increase consciousness by collecting patent fees of seeds from violators.

3) Purpose and goal of this project

Business goals of this project are following three. In order to improve (a) limited access to the market of small-scale flower growers and (b) imperfect flower value chain, (A) we aim to obtain agreement and approval and promote understanding from administrators of Lam Dong Province and Da Lat City; and (B) we also aim to promote understanding of importance of post-harvest

management and necessity of improvement of flower supply-chain among people involved in local flower industry (growers and buyers) in addition to administrators of Lam Dong Province and Da Lat City; and in tandem with proceeding (A) and (B), (C) we aim to complete assessment and feasibility study of the construction plan for the Da Lat Flower Collection Center.

This project will not provide profit as soon as it ends. This project is to build environment for us to play a leading role of establishing structure and regulations of the new flower distribution system for a further development of the flower industry in Lam Dong Province, after (i) obtaining trust from Lam Dong Province and Da Lat City; and (ii) promoting understanding among growers and buyers of our technology in improving flower distribution system.

4) Content of this project

To obtain approval from Lam Dong Province and Da Lat City on the project to establish the Flower Collection Center, we made on-site activities and invitation programs to promote understandings of the new flower distribution system including post-harvest management. For on-site activities, we (i) held seminars to promote understanding of roles that the new Da Lat Flower Collection Center will play; and (ii) proposed the master plan through feasibility study including work-flow, construction design, preliminary calculation for construction cost and so on. And we (iii) held invitation programs 2 times in Japan. As originally planned, the 1st program was to promote understanding about the supply-chain for perishables in Japan and supporting market distribution system (including administrative laws and regulations for the market) targeting for local administrators; and 2nd program was to promote understanding about supply-chain of perishables in Japan and post-harvest management targeting for flower growers and middlemen including local administrators.

5) Project results

We have obtained an approval of the project to establish the Da Lat Flower Collection Center with an official letter dated 24 August 2011 issued by the Lam Dong Province People's Committee, as administrators of Lam Dong Province and Da Lat City grew understanding about importance to improve the flower distribution system including post-harvest management. In addition, the construction site for the Flower Collection Center has been determined at District 3 in Da Lat City with an official letter dated 19 October 2015 issued by the Lam Dong Province People's Committee. The master plan and its feasibility study have been proposed reflected with an internal design of the Flower Collection Center based on suggested work-flow, and an external

road design by taking environment into consideration, after joint discussions among DIDC, local engineers, local architects, JFE Engineering Corporation and us.

Through invitation programs, participants understood how the transparent and fair pricing are secured under administrative leadership in the Japanese wholesale market distribution system; and how strictly each Japanese supply-chain partner in the flower industry takes care of quality management and post-harvest management.

During the seminar in Ho Chi Minh, although we gained understandings about roles of the Flower Collection Center, some buyers showed a strong concern about possible rise in transportation due to improvement of costly cold-chain delivery and packing. However, we could have a deeper discussion from the points, and promote understandings that (i) quality improvement could lead to efficient sales and marketing with less loss thanks to proper packing and establishment of cold-chain; and (ii) waste could become less under a proper control of amount with information of demand and supply through aggregated and collective information system.

6) Prospects for business development at present

We aim that the project of the Da Lat Flower Collection Center will be a public-private partnership project; we as an operator and Lam Dong Province and Da Lat City, as establishers.

7) Rationale of prospects for business development

Our plan of business development is backed up with expected revenue from operation fees and sales of good-quality seeds and production resources by operating the Flower Collection Center; and in addition we can obtain an advantage of ensuring a place to provide flowers to the Japanese market through exports after improving flower quality in the Da Lat flower production area in the long term. As the biggest flower wholesale market, we have a concern that the quantity of flower production in Japan is diminishing and it will be accelerated in future, and expect the Da Lat flower production area will become a source for the Japanese market, with a good environment of flower production and it can be developed further.

8) Remaining issues and plans for business development

Table 2: Remaining issues and plans for business development

	Item	Period	In charge	Policy
1	Consideration of tender conditions	Until start of operation of Flower Collection Center	Lam Dong Province	We propose conditions of expected operator who can build transparent and fair flower distribution system
2	Establishment of rules and regulations of Flower Collection Center	Until end of construction of Flower Collection Center	Lam Dong Province and Da Lat City	We suggest Lam Dong Province and Da Lat City to establish them, by our promoting understandings of importance about involvement of the administrators
3	Announcement of intention to establish Flower Collection Center	Until end of construction of Flower Collection Center	We, as the operator (in cooperation with DIDC)	We try to utilize opportunities to have explanations at seminars arranged by Lam Dong Province and Da Lat City
4	Alliance with business partner	Until start of construction of Flower Collection Center	We as the operator	We plan to set up alliance contents and conditions

For our business development, the most significant issue is the tender to decide the operator of the Flower Collection Center, and another issues to be solved before the tender are (1) consideration of tender conditions, (2) establishment of rules and regulations of Flower Collection Center, (3) announcement of intention to establish Flower Collection Center and (4) alliance with business partner.

And another critical risk is that we might have an obstacle in the project of establishing a new flower supply-chain, because some of present supply-chain partners could suffer disadvantages.

A careful attention is paid to the fact that the new flower supply-chain could replace the present middlemen's tasks as intermediaries between the production area and the consumption area in terms of commercial flow and logistic flow. And we have to take it into consideration that middle-

and small-scale flower growers stand at weaker positions against middlemen because they are often borrowing money from middlemen due to their limited production resources and funds.

9) Plans for future business development

Table 3: Plans for future business development

	Item	Content	Counterplan
1	Personal / human risk	A risk that a person involved in decision-makings in this project could be changed.	A firm schedule is retirement of Mr. Luyen, the director of DIDC. We agreed Mr. Luyen would appoint his successor early and take enough time for hands-off.
2	Risk that another distribution system will be established	A risk that the new “de facto standard” of distribution system could dominate the market and advantages of the Collection Center could be weakened or faded.	We should proactively get involved in building a new distribution system, and consider an integration to our new distribution system in the future.
3	Obstruction risk from middlemen	A risk that middlemen could prevent growers from shipping flowers to the Flower Collection Center because they will have concerns that they might lose their jobs.	We will consider co-working with middlemen and discuss with financial organization, to change the power balance between growers and middlemen.
4	Risk to run the Collection Center sustainably (we, as the operator)	A risk to fall in operational risk due to much less receipt; or to exceed capacity due to too much receipt	We will conduct proactive business operations (request of shipment to growers) for the former, and consider a plan for the 2nd Dalat Flower Collection Center for the latter.
5	Risk to sell seeds and production resources	A risk that the growers’ consciousness of intellectual property right remains low.	We try to inform growers of disadvantages of illegal propagations, by making use of the opportunities of those seminars.

Before the Flower Collection Center will be established, we have risks that (1) a person involved in decision-makings in this project could be changed, (2) the new “de facto standard” of distribution system could dominate the market and advantages of the Collection Center could be weakened or faded, (3) middlemen could prevent growers from shipping flowers to the Flower Collection Center because they will have concerns that they might lose their jobs. For (1), we will urge Lam Dong Province and Da Lat City to hold hands-off to a successor as early as possible; for (2), we proactively get involved in building a new distribution system, and for (3), We will consider co-working with middlemen and discuss with financial organization to discontinue financial relationships between middlemen and growers.

And after the Flower Collection Center will be established, we have risks (4) to run the Flower Collection Center sustainably, and (5) to sell seeds and resources while growers have little consciousness of intellectual property right. For (4), we will proactively try to increase receipt by continuous marketing effort against little receipt, or will consider establishment of the 2nd Flower Collection Center by borrowing a fund from financial institutions; and for (5), we try to inform growers of disadvantages of illegal propagations, by making use of the opportunities at seminars arranged by Lam Dong Province and Da Lat City.

10) Possibilities to connect with ODA projects

There already has been a business plan moving forward with a yen loan scheme among Lam Dong Province, Vietnamese Government and JICA.

Wholesale market in Japan is regarded as the basic social infrastructure responsible for perishable distribution to supply perishable products stably and efficiently to the public. Because wholesale markets in Japan has secured transparent and fair pricing, growers can get an environment to concentrate on cultivation, and it promote competition among growers. Just in the same way, also in the flower industry in Viet Nam, providing a social infrastructure will help to further develop the industry together with growers’ self-help efforts. The idea of self-help effort is consistent with the JICA’s philosophy in development policy.

1.2 Outline of the project



Figure 5: Overview

2 Background of this project

2.1 Background

2.1.1. Environmental of flower production area in Dalat City

Lam Dong Province is located in the central plateau area of Southern Viet Nam, and its climate is stable throughout the year at the average temperature hovering between 18 and 20 degrees Celsius under a warm tropical but cold-upland climate at about 1,500 meters above sea-level. Whereas the flower production area in Sapa, Northern Viet Nam in winter and flower production (number of annual harvest is 2-3 times) becomes impossible due to occurrence of frost, it is possible to make more calculated cultivation plans in the Da Lat flower production area (number of annual harvest is 3-4 times). (Because there are 2 flower production areas in Lam Dong

Province; one is Bao Loc area where production of orchids such as Phalaenopsis is popular and another is flower production area in Da Lat and neighboring districts, we call the latter area as the Da Lat flower production area. Statistic figures on this report are collected through interviews with the Agriculture and Rural department of Lam Dong Province, Da Lat Agriculture Center and DIDC, and Da Lat Flower Association.)



Figure 6: Dalat flower production area



Figure 7: A flower grower in Da Lat

Arable area of Lam Dong Province is about 277 thousand hectares and the flower production area grew more than double from 3,200 hectares in 2009 to 7,200 hectares in 2013. This is mainly because (1) foreign agricultural companies and domestic investors in Vietnam cultivate new flower growing areas; and (2) the local growers change their cultivation crops to flowers from coffee beans for example, expecting that flowers could be higher-value added products. As Da Lat City continues to be urbanized in recent years, the increase of flower production in Da Lat City shows slows down, but the cultivation area is expanding to neighboring districts such as Duc Trong, Lac Duong and Lam Ha.



Figure 8: Flower production area in Lam Dong Province²

地域		花き生産面積 (ha)	花き生産本数 (千本)
ダラット	Da Lat	4,743.0	1,533,654
ドンユン	Don Duong	956.8	296,130
ラクユン	Lac Duong	578.4	186,788
デクチョン	Duc Trong	829.2	150,408
ラムハー	Lam Ha	126.0	41,848
バオロック	Bao Loc	25.2	1,795
ラムドン省計		7,258.6	2,210,623.5

Figure 9: Flower production area and amount in each district of Lam Dong Province in 2014³

Although it has rugged terrain as a typical plateau area, integrated cultivation can be found on flat lands between mountainous areas. We can find well-drained fertile ground with volcanic soil, weathered basalt Terra Rocha, and the annual rainfall is about 1,800 mm (average humidity around 85%), which we can say rich in water resources.



Figure 10: Terra Rocha stratum

month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Okt	Nov	Dec
mm	8	26	56	169	209	166	254	219	302	230	92	27
*C	17.0	17.9	18.5	19.7	20.4	20.1	19.4	19.6	19.6	19.0	18.1	17.2
*C (min)	10.3	10.4	11.3	13.3	15.0	15.7	15.7	15.6	15.0	14.2	13.2	11.8
*C (max)	23.8	25.5	25.8	26.2	25.9	24.5	23.2	23.6	24.2	23.8	23.1	22.7
*F	62.6	64.2	65.3	67.5	68.7	68.2	66.9	67.3	67.3	66.2	64.6	63.0
*F (min)	50.5	50.7	52.3	55.9	59.0	60.3	60.3	60.1	59.0	57.6	55.8	53.2
*F (max)	74.8	77.9	78.4	79.2	78.6	76.1	73.8	74.5	75.6	74.8	73.6	72.9

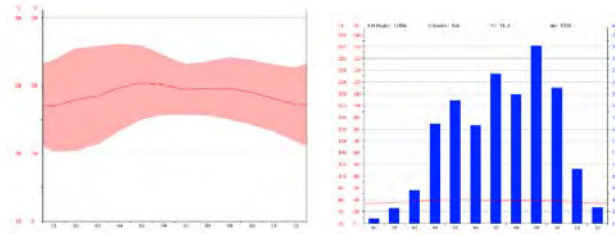


Figure 11: Rain and temperature diagrams, air temperature, climate chart in Da Lat⁴

² Reference: LAM DONG PROVINCE TRAVEL MAP

³ Reference: Lam Dong Province Department of Agriculture and Rural Development dept

⁴ Reference: Climate-data.org retrieved 24Jan2017

2.1.2 Project “Sophistication of high-value added agriculture by forming a Sextiary Sector”

At the top-level meeting between the Head of state of Vietnam, Mr. San and the Japan’s prime minister in March 2014, they agreed to holding meetings in Vietnam to discuss cooperation in agriculture, forestry and fishery, and held the “high-level meeting of cooperative dialogue in agriculture between Vietnam and Japan – 1st meeting” in June 2014. At the high-level meeting – 2nd meeting”, then Japan’s minister of Ministry of Agriculture, Forestry and Fishery, Mr. Hayashi and then (and present) Vietnam’s minister of Ministry of Agriculture and Rural Development, Mr Phat mutually approved as joint chairman to mid- and long-term vision to establish food value-chain in Vietnam through public-private partnership.

Based on the mid- and long-term vision, Lam Dong Province proposed 8 strategies, aiming for “Sophistication of high-value added agriculture by forming a sextiary sector”. 8 strategies are (1) post-harvest center for high value-added products, (2) agricultural complex/park, (3) improvement of flower distribution system, (4) sophistication in production of vegetables and flowers, (5) branding, (6) Agro-tourism, (7) development of human resources, and (8) strengthening R&D. This project is related to (3) improvement of flower distribution system.

2.1.3 Bottlenecks preventing further production development in the Da Lat flower production zone

Annual flower production in Da Lat flower production area is about 2.1 billion stems (in 2013. In monetary base, about 23 million US dollar), and it accounts for about 50% of whole production of flowers in Vietnam. Although further growth and development can be expected due to expansion of cultivation area in neighboring regions of Da Lat City, we can find bottlenecks preventing utilization of its environmental advantages.

1) Limited access to the market for small-scale flower growers

In Da Lat flower production area, nearly 3,000 households who make their livings by growing flowers. By categories, (1) individual growers account for 85%, (2) agricultural production corporation for 10%, (3) contract growers tied with (2) for 5%. Among agricultural production corporations, some run their business in large scale and with modernized technology such as Da Lat Hasfarm who has more than 90 hectares with foreign capital investment, but most of flower

growers run small-scale business with an average production area of 2,000 square meters per a flower grower.

In Da Lat, there is the Da Lat Flower Association, a cooperative organization of flower growers. As the board of the association is dominated by large-scale flower production corporations, the association's opinions doesn't often represent voices of small-scale flower growers. In addition, development assistance policies from Vietnam government and Lam Dong Province are often taken through the Da Lat Flower Association, small-scale growers enjoy little benefit from those policies.

Small-scale flower growers cannot help depending on middlemen as intermediaries because they cannot produce their flowers in good amount facing with a large demand from domestic supermarkets and so on. And export of flowers from Da Lat to Cambodia, Korea and Japan is expanding year by year, but the market access for small-scale growers is very limited. Many small-scale flower growers stand at weaker positions with little production resources and capitals, and they cannot borrow new loans for facility investment from local commercial banks, and they often get poor-quality seeds, pesticides, fertilizes and so on for production from local agents of seed companies and material companies.

2) An incomplete value chain

We can divide present flower value-chain in Vietnam into 6 schemes, starting from the Da Lat flower production area.

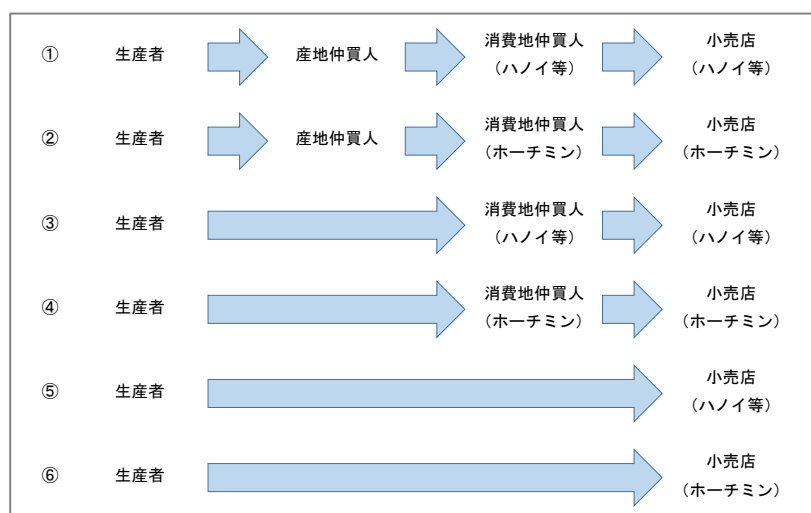


Figure 12: Flower balluchainscheme picture

About 80% of flowers produced in the Dalat flower production area go to Ho Chi Minh. On the diagram up above, (2) accounts for about 20%, (4) for about 55% and (6) for 5%. For others, about 15% goes to Hanoi or other cities and 5% is exported to abroad (often through Ho Chi Minh).

It largely depends more on product quality than the scale of product about which scheme is chosen. High-quality flowers are often directly purchased by middlemen in the consumption area or florists in Hanoi (scheme (3) and (5)), but it is said that about 70% of distributed flowers are traded on consignment basis and usually middlemen (in production area and in consumption area) are relaying as intermediaries between the production area and the consumption area. Consignment transaction is one of the sales methods for growers to entrust middlemen to sell, and the prices are determined not in the production area but in the consumption area. (We call those prices “invoice prices”.) Small-scale flower growers cannot help depending on middlemen to make their producing flowers into cash.

Under the consignment transaction, especially when the actual invoice price becomes higher than the forecast price, middlemen often inform growers of lower price, instead of informing the actual price traded in the consumption area. Because physical distance between the production area and the consumption area; and dependence of flower growers on middlemen create information asymmetry for pricing. And thus, middlemen can easily “beat down the price” exploitatively. And it usually takes 1 to 2 weeks from shipment till payment and flower growers usually receive amount of invoice prices by hand from truck drivers who come back from the consumption area, but it sometimes happens that malicious drivers don’t pay good amount to growers.

On the other hand, in purchase transactions which account for 30% of whole transactions, the amount already decided before shipment from the production area is often not paid in good amount by buyer’s raising a quarrel accusing of any quality claim, after buyers receive flowers delivered all the way from the production area. Because purchase transactions are often transactions with buyers in remote location like Hanoi, growers usually cannot help being compelled to accept in such cases. Thus, small-scale growers with weak negotiation power are suffering all credit risks of buyers.

To realize value-chain, it is necessary to clarify added-value at each chain partner, but the pricing is very unclear especially at middlemen’s level in the present flower value-chain in Vietnam. Small-scale growers, who have weaker negotiation power, are de-motivated in making

effort to produce higher quality product, because the increase of added-value (from higher quality) is absorbed out at middlemen.

3) Lack of post-harvest management

Flowers are one of perishable products, and management after harvesting (post-harvest management) of flowers is more important than that of vegetables & fruits (which are also perishable products) because deterioration of appearance largely eliminates its value. The most important post-harvest managements are cold-chain management and packing, but those two are paid little attention to in the flower industry in Vietnam.

Cold-chain management is the technique to preserve perishable products for a long term by keeping them in a cold temperature without any breaks from the production area to consumers. There is little number of growers and middlemen who have cold rooms in Vietnam, excluding the large-scale agriculture corporations who do exports. For example, a lot of scientific studies show that the pre-cooling treatment after harvest provides positive effects for longer vase life of flowers, because it decreases respiration (breathing) of flowers and retrain consumption of energy. It is a common practice in countries like Japan and the Netherlands, it is rare in Vietnam including the Dalat flower production area.

The reason that they don't do pre-cooling in Vietnam is that they don't have enough money to invest to cold rooms, but it is worse that the wrong idea dominates, saying that it is more fresh to ship out quickly as soon as it is harvested, comparing with spending time on pre-cooling treatment.

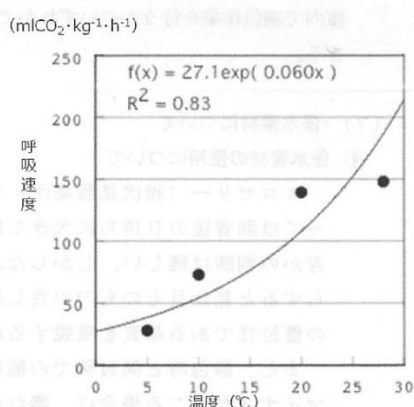


Figure 13: Rose keeps temperature and respiration rate (DOI original chapter's original drawings)



Figure 14: Da LAT Home broker works

When we look at the common case (2)-in chronological order, flowers harvested at night are collected by small trucks arranged by middlemen in production area, and are repacked at the houses of middlemen. At 2 p.m., the transportation company picks up repacked flowers at middlemen, and leaves Da Lat for Hoc Chi Minh. Usually, a 14-ton truck is used for the delivery of 8-10 hours for 320 km distance between Da Lat and Ho Chi Minh. The truck reaches Ho Chi Minh later than 0 a.m. on the next day and unloads flowers at flower markets in Ho Thi Ky, Dam Sen, Binh Dien, and Thu Duc. After middlemen at those markets receive flowers, they transfer them for orders from their customers and display remaining at the shops of middlemen.

Table 4: Timeline of supply-chain from Da Lat to Ho Chi Minh

Da Lat			(Transport)	Ho Chi Minh		
Grower	Transporter	Middleman	Transporter	Middleman	Transp/Retailer	Retailer
Harvest	Collection	Re-packing	Transport	Wholesale	Transport	Sale
Day 1	Day 2			Day 3		
18:00-20:00	7:00-11:00	7:00-14:00	14:00-0:00	0:00-3:00	3:00-6:00	6:00~

During this process, cold-caarriage trucks or cold storages are not usually used (middlemen in consumption area usually have small cold storages in their shops for stocks, but it is rare to see cold storages used in the delivery process). Because flowers are exposed under 25-30 degrees Celsius as soon as they go out from Da Lat Highlands, they consume a lot of energy and become rapidly deteriorated. As a field study, we put a temperature logger at the grower’s farm in Da lat and to measure temperature in the box packed with flowers during the delivery. In this case, the temperature continued to rise just after the departure from Da Lat at 11:30, and it went up to 29 degree Celsius 4 hours later and it remained at 29 degree Celsius till it was unloaded at the Ho Thi Ky market in Ho Chi Minh at 0:00.

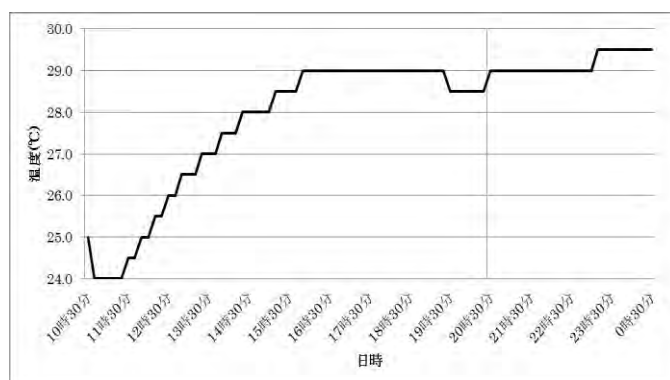


Figure 15: Transition of temperature in the delivery box (From Da Lat to Ho Chi Minh)



Figure 16: Putting a logger to delivery box

Flowers are packed or repacked by growers or middlemen in consumption area. Materials of packing are recycled thin cardboard boxes in low quality and plastic strings to band boxes. After cardboard boxes are filled with flowers to the brim, those are compressed with staffs from middlemen mounting on the boxes; and banded too firmly with plastic stings. Flowers already get damages at this level of process.

In the Vietnamese flower industry, cardboard boxes are recognized only as “packing box” and not recognized as a protection of flowers during delivery. Staffs of the transportation company load boxes by standing on those boxes, and unload boxes by tossing them out from the truck luggage carrier. These outrageous handlings during the delivery, and together with bad packing, give a serious damage to flowers.



Figure 17: Area brokers jumped by packing



Figure 18: Dealing with rough carriers at dam Sen (the market)

4) Lack of consciousness of intellectual property rights

Because flowers, especially flowers which can be bred in the vegetative method, can be easily propagated, “Plant Variety Protection and Seed Act” is established to protect new varieties. When the variety is registered based on the Act, the breeder’s right as one of intellectual proper rights is granted as a legal countermeasure against illegal propagators. There is an international rule internationally standardized in content of right, conditions, valid period and so on called “International Convention for the Protection of New Varieties of Plants” (UPOV Convention), and Vietnam is a signing country. The domestic law to protect breeders’ rights has been established in Vietnam, but doesn’t impose strict controls in the flower industry; and growers don’t pay attention to or have consciousness about breeders’ rights. Therefore, flowers propagated in unauthorized and illegal way are broadly cultivated in Vietnam.

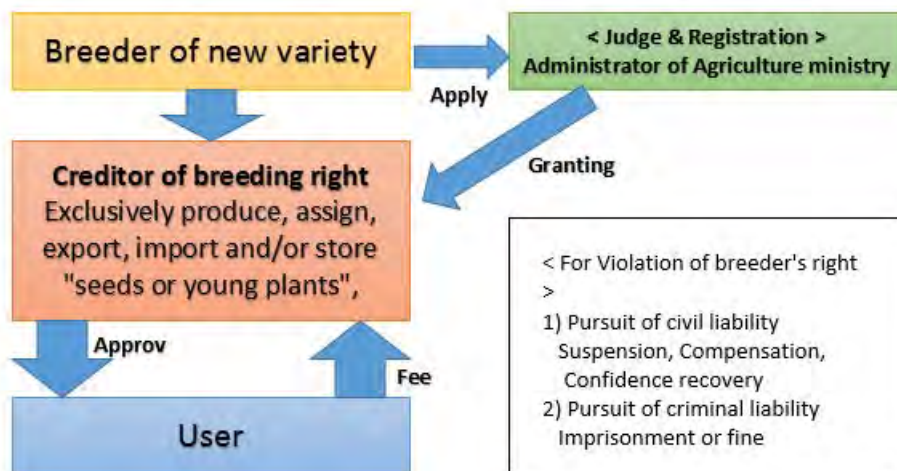


Figure 19: Breeder's right

Table 5: UPOV Convention

'91 Convention	
Signed countries and areas: 55 (Mar 2016)	
*Vietnam signed on '91 Convention in 2006	
Target	All plants (with 10-year reprieve)
Reprieve before application for domestic assignment	1 year
Duration of force	20 years after registration 25 years for perennial plants

Even if a grower can produce high-quality flowers by his/her effort, flowers violating the breeder's right cannot be exported. And breeding companies feel it negative to introduce high-quality seeds and/or new varieties in Vietnam including the Da Lat flower production area, because they have risks that those seeds and varieties seeds could spread in unauthorized and illegal way and that makes it difficult to cultivate higher-value added products. In Lam Dong Province, the agriculture development center, under control of the department of agriculture and rural department, is developing flower varieties and allow growers to use them for free. But those flowers usually have less competitive.

2.2. Dissemination of technology and possible contribution to development issues

2.2.1. Details of dissemination of technology

Technologies to be disseminated in this project is not physical equipment or product, but design and know-how of operations in flower supply-chain. More concretely, we plan to design the Flower Collection Center and to disseminate operation know-how which can treat post-harvest management and proper packing.

Original project plan included dissemination of “Operation know-how of auction market”, but we decided to establish “Flower Collection Center” preceding “Flower Auction Market”, because it will take a long time to

We are the biggest in flower sales amount and volume in Japan as one of “Central Wholesale Markets of flowers” designated by Japan’s Ministry of agriculture, forestry and fisheries. We invest our capital to introduction of advanced information technologies such as on-line transaction system and remote auction system - which are more advanced than systems used not only by other flower markets but by vegetables & fruits or fish market - to connect more than 1,300 growers (per year) with more than 600 buyers providing with more than 20,000 varieties (per year). And in order to pursue effort to apply cold-chain idea, we take the lead to execute facility invest of a large-scale cold-storage to promote cold-chain. Utilizing our operation know-how, we have held operation instructions to Yangjae Flower Market in Seoul, Korea, Kunming Flower Market, Taipei Flower Market in Taiwan and so on.

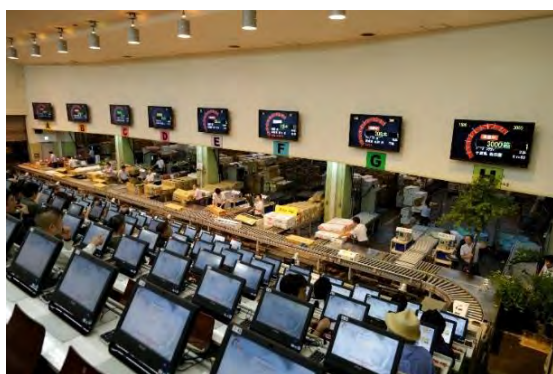


Figure 20: OTA floriculture auction



Figure 21: Distribution center at OTA

An advantage that the Flower Collection Center is located in the Da Lat flower production area is the physically close distance from growers' places. It is easier to encourage growers to bring flowers to the Collection Center, and we can start post-harvest treatment soon after harvesting. On the other hand, a disadvantage is the physically long distance from the consumption area. We can cover disadvantages of physical distance seamlessly and on real-time in terms of commercial flow, information flow and cash flow by utilizing information technologies, as we enables remote auction transactions in Japan. However, in logistic flow, a distribution hub is required and, we have to make an alliance with a wholesale market or a large wholesaler.

In addition, the Collection Center as a distribution center could influence neighboring transportation condition. Even in Japan, wholesale markets located in the city center received claims from neighbors about traffic noise, risk for pedestrians and so on in the environment that trucks drive back and forth very often. Therefore, it is necessary to have a feasibility study, taking surrounding environment – especially neighboring transportation condition and residential areas – into consideration.

2.2.2. Possible contribution to development issues

Our development issue is mentioned in “2.1.1 Bottlenecks preventing further production development in the Da Lat flower production zone”. Here we discuss possible contribution for the issue.

1) Development issue: Possible contribution to “Small-scale business”

Located in the Da Lat flower production area, the Da Lat Flower Collection Center will collect flowers from the area and hold joint grading and shipment. Although the number of flowers collected from each grower is small, the Collection Center as “a big provider” from collective shipment from growers will negotiate with buyers as a representative of growers. Thus, disadvantages from small-scale business will be solved.

And for procurement of production resources such as seeds, pesticides and fertilizers, the operator of the Collection Center will evaluate and investigate; and growers can enjoy volume-discount from joint procurement.

2) Development issue: Possible contribution to “Imperfect value-chain”

We make the pricing at the Collection Center transparent and fair. To secure transparency and fairness, (1) standardization and familiarization of quality grading, (2) clarification of operation policy, and (3) third party’s audit on whether the policy is properly proceeded.

At present, even if a flower grower produce a high-quality product, additional added-value is exploited by the middleman. Especially for small-scale growers, the possibility of exploitation is higher comparing with the large-scale growers, because the asymmetry of information on pricing is large. As transparent and fair pricing influenced by demand and supply is achieved, flower growers can get price incentive that they can get higher revenue when they grow higher-grade quality flowers. Such motivation of growers by self-effort will improve quality of flowers as a whole flower industry, and that will lead to increase of income for flower growers. The smaller-scale the flower grower is, the more advantage he can get.

In order to solve this “imperfect value-chain”, transparency and fair pricing is indispensable.

3) Development issue: Possible contribution to “Lack of post-harvest management”

The Collection Center is a closed facility where the inside temperature can be controlled, and hold watering, grading, pre-cooling, packing, sorting and shipping after flowers are collected to the Collection Center. By concentrating the quality management on the Collection Center, we try to redeem the lack of post-harvest management; and achieve the cold-chain distribution from the Collection Center to the destination by cold-trucks based on the partnership contract with a major transportation company who has cold trucks and can trace process of delivery.

4) Development issue: Possible contribution to “Lack of consciousness of intellectual property right.

3 project summary

3.1. Project goals and objectives

3.1.1. Purpose of the program

For further development of the flower industry of the Dalat flower production area, we aim to achieve transparent and fair pricing system based on demand and supply; by (1) promoting understandings of flower distribution system among administrators in Lam Dong Province and Da Lat City, (2) dissemination quality control know-how and technique, (3) introduction of cold-chain and post-harvest management, and (4) promoting formation of growers' cooperatives among small-scale growers.

3.1.2. Goal of this project

A) To obtain agreement and approval from Lam Dong Province and Da Lat City about improvement of flower supply chain in Vietnam and establishment of the Collection Center

Through explanations and presentations at Lam Dong Province and Da Lat City People's Committee meetings, and individual explanations to relating administrative offices such as Department of Agriculture and Rural Development, Department of Plan and Investment and Department of Trade and Industry, we plan to promote understandings of improvement of flower supply chain and importance of establishment of the Flower Collection Center; and which will lead to agreement and approval from Lam Dong Province and Da Lat City.

B) To promote understanding of importance in post-harvest management and necessity in improvement of flower supply-chain among growers, middlemen, persons in charge of agricultural administrations and persons related to local flower industry.

We divide the invitation program in Japan to 2 times; (1) the 1st program aims to promote understanding about the supply-chain for perishables and its supporting market distribution system (including administrative laws and regulations for the market) targeting for local administrators; and (2) the 2nd program aims to promote understanding about supply-chain of perishables in Japan and post-harvest management targeting for flower growers and middlemen including local administrators.

For the on-site seminar, we hold seminars both in (1) the production area (Da Lat flower production area) and in (2) the consumption area (Ho Chi Minh). In (1) the production area, we plan to explain about the Collection Center and the new flower supply-chain gathering middlemen in Da Lat and small-scale growers.

C) To complete feasibility study associated with assessment and implementation of the Collection Center

To establish the Collection Center which enables centralization of flower grading and post-harvest management, we aim to investigate environment and infrastructure together with design of operations, quality control and efficient motion planning of logistic operations.

3.1.3. Goals of this project (in terms of business)

This project will not provide profit as soon as it ends. The business goal is to build environment for us to play a leading role aiming for establishment of the Flower Collection Center with credence from Lam Dong Province and Da Lat City and with understanding about our technologies and know-how to improve the flower distribution system among growers and middlemen. To build this environment is an essential condition for us to join the tender to decide the operator for the Da Lat Flower Collection Center.

3.2. Content of the program

3.2.1. Schedule

Originally, the contract term of this project was from 20 October 2014 till 30 September 2016, contracted with JICA, but the expiry date is extended to 15 March 2017 due on the schedule of Lam Dong Province as an implementing agency.

Table 6: Schedule

2014	October	Launch of this project
	December	1st on-site activity
2015	February	2nd on-site activity
	March	3rd on-site activity
	May	4th on-site activity
	August	5th on-site activity

	October	6th on-site activity
	November	7th on-site activity
	December	8th on-site activity
2016	April	1st invitation program in Japan
	May	9th on-site activity
	July	10th on-site activity
	September	11th on-site activity
	October	12th on-site activity
	November	2nd invitation program in Japan
	November	13th on-site activity
	December	14th on-site activity
2017	January	15th on-site activity
	February	16th on-site activity
	March	End of project

3.2.2. Organization

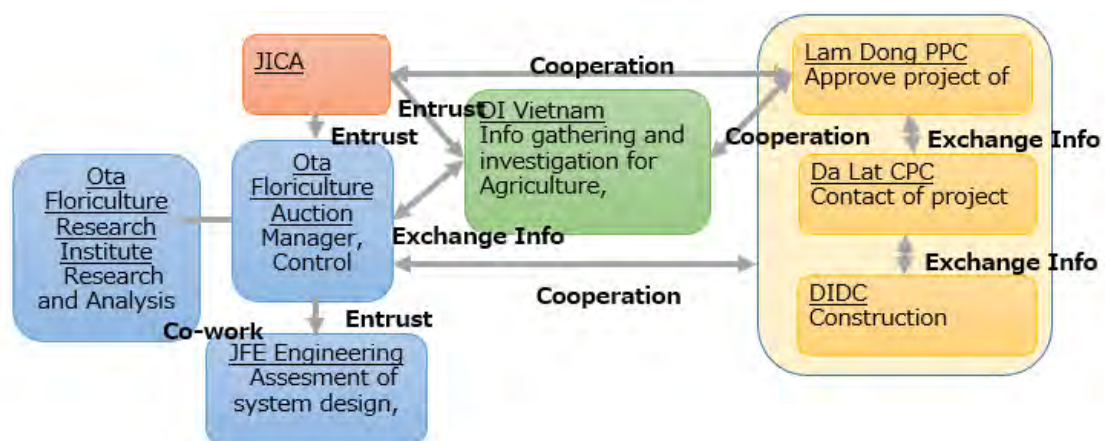


Figure 22 Organization chart

This is a commissioned project from JICA, and a joint project of Ota Floriculture Auction Co., Ltd. And Ota Floriculture Research Institute Ltd. We are sub-contracting with JFE Engineering Co., Ltd. for engineering and system design of the Flower Collection Center.

Dream incubator Inc. also had a commissioned project from JICA of “the project for information gathering and investigation regarding integration of agriculture, forestry, fishery and related industry”. The project of Da Lat Flower Collection Center is involved in one of their proposing basic strategies as “regional development model in Lam Dong Province”. We exchange information each other.

Although the Lam Dong Province People’s Committee has authorization to approve proposals on the project of Da Lat Flower Collection Center, Da Lat City People's Committee is the primary contact (appointed by Lam Dong Province People's Committee). And DIDC is in charge of construction design and engineering of the Collection Center, we iron out practical details mainly with DIDC.

About investigations of the present flower supply chain and obtaining opinions about the new supply chain, we get advices from Dalat Flower Association, Growers Union and Da Lat Agriculture Center.

3. 2.3. content

Table 7: goals and content of the program (summary)

#	Task	Activity plan and Result																				Content	Goal (At end of project)
		1st on-site 12. 2014	2nd on-site 02. 2015	3rd on-site 03. 2015	4th on-site 05. 2015	5th on-site 08. 2015	6th on-site 10. 2015	7th on-site 11. 2015	8th on-site 12. 2015	9th on-site 05. 2016	10th on-site 07. 2016	11th on-site 09. 2016	12th on-site 10. 2016	13th on-site 11. 2016	14th on-site 12. 2016	15th on-site 01. 2017	16th on-site 02. 2017	1st inv-prog 04. 2017	2nd inv-prog 11. 2017				
1	Agreement and/or approval				.....				.....	.....											<ul style="list-style-type: none"> •Appication for approval from Lam Dong and Da Lat •Explanation & presentation to Lam Dong and Da Lat 	<ul style="list-style-type: none"> •Get approval of our involvement in preparation for construction design of Flower Collection Center 
2	Understanding of importance of post-harvest						.....					.....			.....						<ul style="list-style-type: none"> •Hold seminars in Da Lat and Ho Chi Minh •Invitation program in Japan 	<ul style="list-style-type: none"> •Promote understanding of importance of quality control and link to practice 
3	Selection of commercial flow							.....					.....								<ul style="list-style-type: none"> •Investigation of business environment •Search for business partner 	<ul style="list-style-type: none"> •Select a major receiver of flowers in Ho Chi Minh 
4	Investigation of market / needs																				<ul style="list-style-type: none"> •Investigation with Lam Dong Province and Da Lat City 	<ul style="list-style-type: none"> •Show quantitative data of market and needs
																					<ul style="list-style-type: none"> •Investigation with growers, middlemen and buyers 	<ul style="list-style-type: none"> •Promote understanding of profitability among three
5	Ensurement of profitability				.....			.....			.....										<ul style="list-style-type: none"> •Investigation of infrastructure in Da Lat and Ho Chi Minh 	<ul style="list-style-type: none"> •Calculation of investment in infrastructure •Show repayment model 
6	Calculation of investment					.....		.....			.....			.....							<ul style="list-style-type: none"> •Feasibility study 	<ul style="list-style-type: none"> •Fix details of Flower Collection Center •Set Operation flow 
7	Set up rules & regulations											.....		.....							<ul style="list-style-type: none"> •Establishment of rules and regulations at Flower Collection Center 	<ul style="list-style-type: none"> •Clarify roles in making rules and regulations 
8	Alliance with biz partner						.....		.....					.....							<ul style="list-style-type: none"> •Alliance with partners related with Flower Collection Center 	<ul style="list-style-type: none"> •Alliance for cash settlement 

Chapter 4 Implementation result of the project

4.1 1st on-site activity

1st on-site activity has been done from 21/12/2014 to 27/12/2014 in Hanoi, Da Lat and Ho Chi Minh. Aim of the first visit was to explain about description of the project and time schedule to Lam Dong Province and Da Lat City People's Committee, and also to verify progress of construction plan of Da Lat Flower Wholesale Market Project. At the moment, improvement of flower distribution system in Lam Don Province seemed low priority since there were no progress and decision of location and budget plan.

Although the plan of establishing new Da Lat Flower Wholesale Market has been listed on investment plan in Lam Dong Province, priority seemed still low.

Da Lat flower collection center has two location plans, one is located in north mountain area in Ward 11 with area size of 11.3ha and another is located close to Da Lat international airport (30 minutes' drive from Da Lat city central) in Ward 13 in Duc Trong area. In Ward 11, leveling of ground is necessary because of mountain slopes. Even more, there are many people living irregularly therefore total construction fee would be high. On the other hands, Ward 13 is predominant location to export flowers with easy accessibility to international airport. Lam Dong Province only have a rough budget plan however ability of management skill such as making a detail of budget and project management. For this reason Lam Dong Province has a big expectation of support from JICA.



Figure 23: Planning diagrams of Da Lat Flower Wholesale Market draw by DIDC - 1

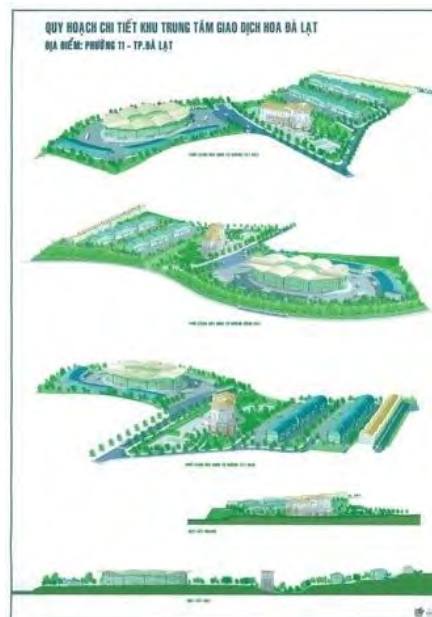


Figure 24: Planning diagrams of Da Lat Flower Wholesale Market draw by DIDC - 2

Lam Dong Provincial People's Committee is the final decision maker of the flower collection center. OTA floriculture Auction plans to participate to a conference hold from 5th to 7th February 2015 by Lam Dong Provincial People's Committee, JICA Vietnam office and Dream Incubator Co., Ltd. for proposing new distribution scheme of flower collection center.

In addition, following key persons visited OTA Floriculture Auction under a training program named 'Lam Dong Province Ministry of agriculture, forestry and fishery and related industrial integration and verification survey training' organized by JICA Viet Nam office; Lam Dong Province People's Committee, Director of investment planning, Deputy Director of the agricultural rural development. High-tech systems and machines such as auction system and distribution machines tends to lead participant's attention however most important scheme of this project is to explain about the role and function of flower supply chain in the market. These themes were explained deeply during the seminar and got understanding from participants.

4.2. 2nd on-site activity

2nd on-site activity has been done from 03/02/2015 to 10/02/2015 in Da Lat and Ho Chi Minh City. Participating to the interim report presentation of "Project for supporting Lam Dong province in formulating agriculture development model by multi-sector approach and promoting

investment environment in agriculture sector" done by joint group of Dream Incubator Co.,Ltd, Nippon Koei Co., Ltd. and Koei Research Institute held in the conference room of Lam Dong Province People's Committee was main aim of second field activity. In addition, inspection of planned construction site of Da Lat Flower Wholesale Market and meeting with SATRA has done during this visit. Some of administrators were skeptical about the plan suggested during the conference. Between SATRA, we identified interests of constructing new flower distribution system each other.

Lam Dong Provincial People's Committee (Mr.Viet; chairman was not shown) and the Viet Nam Social Sciences reached to a basic agreement regarding agriculture development plan in Lam Dong Province suggested by Dream Incubator Co.,Ltd, Nippon Koei Co., Ltd. and Koei Research Institute, on the other hands some resistances had shown to agricultural development plan to specialize in the production of vegetables and ornamental flowers. In addition, grower seemed difficult to understand introducing flower distribution system itself. Viet Nam Social Sciences tented to focus only on technical aspects but not paid attention to roles and function of flower distribution system. Details of an important function of flower market bringing a fair and transparent price formation should be mentioned during the invitation training period.

Planned construction sites of Da Lat flower collection center were located in two places; one in Ward 11 with 11ha and other closed to the international airport with 13ha. The first one has been secured by Da Lat City People's Committee in Ward 11 was located in center of flower production area with easy handling. However, this site had sloping cliffs and illegal residents. The second one is recommended by Da Lat Flower Association because of having future possibility to export flowers from the international airport. Although this location is already flat, land cost of leveling is lower, it is necessary to pass a toll road from growers to this location. For these reasons, it is considered that Da Lat Flower Wholesale Market should be located in agricultural zones or nearby post-harvest management facilities as Dream Incubator Co., Ltd suggested with focusing on effective quality control and logistic.



Figure 25: Signs indicate Da Lat Flower Wholesale Market construction site



Figure 26: 1-2 meter of cliff at the location in Ward 11

4.3. 3rd on-site activity

3rd on-site activity has been done from 22/03/2015 to 28/03/2015 in Da Lat and Ho Chi Minh City. Main aims of this visit was 1) to attend Lam Dong Province agriculture work shop and business exchange organized by JETRO, JICA and Mitsubishi Tokyo UFJ with support from Lam Dong Province People’s Committee and 2) to proceed discussion with SATRA and to visit Bihn Dien market operated by SATRA. Even though we got skeptical opinion from some members of Lam Dong People’s Committee and related organizations during the second field activity, we could get positive feedback and understanding from Mr.Viet; chairman of Lam Dong People’s Committee this time. The project of constructing a flower wholesale market is officially listed on one of the important agricultural development strategy and initiated under strong leadership of influential persons of Lam Don Province People’s Committee.



Lam Dong Province agriculture work shop and business exchange became a large gathering to attend 45 Japanese companies and approximately 300 participants included in total. A presentation of interim report of Dream Incubator Co.,Ltd got strong support from Mr.Viet also this project of constructing flower wholesale market clearly described in closing speech again. It seemed to gather momentum towards starting the project.

We could discuss and contact with many enthusiastic Vietnamese companies during this conference for instance exporting Vietnamese flowers to Japan. Whereas it is not directly related with the project of constructing flower wholesale market, we started to arrange connection for establishing deeper relationship from many aspects with flower business in Lam Dong Province. Even more, it was very beneficial to connecting with Japanese companies related to agricultural facilities and logistics.



Figure 27: View of Lam Dong Province agriculture workshop and business exchange

During this third field activity, we arranged detailed schedule and contents of the project with Mr.Luyen; Director of DIDC. Regarding about two times of invitation programs to Japan, Ministry officials and middlemen at first time and growers at second time would be invited (at this moment in August-September and in December were planed). The final seminar in Viet Nam are planned three times as each related associations, middlemen/growers and Ministry officials would be invited to the meeting room at DIDC. And about planned construction site is agreed to be assessed in Ward 11 in Da Lat city and Duc Trong area.

4.4 4th on-site activity

4th on-site activity has been done from 11/01/2015 to 16/05/2015 in Da Lat and Ho Chi Minh City. There were three main tasks 1) accompany to inspection visit of agriculture sector of Mr. Fukuda; Japanese Ambassador of Viet Nam and Mr. Phat; Minister of Agriculture and Rural Development 2) researching export possibility of agriculture products from Lam Dong Province 3) implementing a meeting with Da Lat City People's Committee about having invitation programs to Japan and seminars in Viet Nam. In addition, we discussed and checked project

progress of SATRA. At an explanatory meeting of action plan Mr. Fukada and Mr. Phat attended, planed schedule of constructing flower wholesale market has firstly disclosed officially.

According to the explanatory meeting, flower wholesale market is going to be started to construct, to complete in December 2015 and to operate in June 2016. This schedule published to news media with its tile of ‘Ho Chi Minh City People’s Committee and SATRA reached to agreement on construct a new flower wholesale market’. However it leded some confusions because SATRA has been considered self-investment. Additionally, whereas Lam Dong People’s Committee designated Lam Dong Province industrial trading sector it also leded confusions to Da Lat city People’s Committee has been considering of this project from the beginning.



Figure 28: Action plan meeting



Figure 29: Meeting at Da Lat people's Committee

Schedule of invitation programs to Japan and seminar in Vietnam is confirmed by Da Lat city People’s Committee and also planned a schedule to have a meeting with Lam Dong People’s Committee to give proposal of this project. Regarding possibility to export agricultural product from Lam Dong Province to Japan is advised as exporting Chrysanthemums, orchids and foliage seemed high potential after visiting flower growers in Da Lat. It is advisable to maintenance seed providing flow and establishing grower association in Viet Nam since agricultural products without breeder’s right is prohibited to export under international trading regulation and also small production volume is not suit on exporting transaction. However it can be solved once local Vietnamese growers reconsider propagation system and build an association for handling cooperated selling system in the future.

4.5. 5th on-site activity

5th on-site activity has implemented from 19/08/2015 to 23/08/2015 in Da Lat and Ho Chi Minh City. Four main tasks of this visit was 1) having a presentation to explain about the project construction flower wholesale market to Lam Dong People's Committee, 2) reporting progress of project proposal with Mr. Luyen; Director of DIDC to Da Lat city People's Committee and Lam Dong People's Committee, 3) having a meeting with a representative of the project at SATRA and 4) visiting flower growers in Da Lat. At the presentation to Lam Dong People's Committee, location of planned construction site of flower wholesale market was reconsidered and also agreed on the principal of using public investment for construction. In addition, a facility in Da Lat city is going to be determined as 'Da Lat Flower Collection Center' connected with Binh Dien market in Ho Chi Minh City as in consumer side under new distribution scheme.



Figure 30: Flower grower owned by Japanese in Da Lat



Figure 31: Wet storage with temperature control

Regarding plans for flower wholesale market, Lam Dong Province People's Committee, Da Lat city People's Committee, Da Lat Flower Association all gathered and exposed current five issues. These five issues at this moment are identified as 1) candidate location; preferable to find another place from current candidate location in Ward 11, 2) investment; preferable to use public investment with concerning ratio of financing share, 3) operator; middlemen or growers are considered as operator supported and consulted by OTA Floriculture Auction, 4) roles of Vietnamese government; OTA Floriculture Auction will support to build up basic roles of Lam Dong Province to have an initiative as administrator, 5) connection and interrelation between Bihn Dien market in Ho Chi Minh City; flower collection center is going to be construct with

possibility to have function of procurement and post-harvest center instead of flower wholesale market.

4.6. 6th on-site activity

6th on-site activity has done from 22/10/2015 to 29/10/2015 in Da Lat, and Ho Chi Minh City and Hanoi to implement pre-feasibility study for constructing the flower collection center in Da Lat. The newest candidate location in Ward 3 has high efficiency of transportation however there are still several issues to be solved such as current residents and water supply.

Whereas this feasibility study should have already done in January/February it has been changed to in November 2015 with following a request from Mr. Luyen; Director of DIDC. Construction site of Da Lat Flower Collection Center determinate in Ward 3 as a new candidate location after revocation of Ward 11 in August 2015. However investors and operators are still not undetermined especially choosing an operator is main concern of Da Lat Flower Association between several different opinions. Moreover, SATRA as a partner of distribution function in Ho Chi Minh City and Lam Dong People's Committee as the final determinant seemed also having own expectations.



Figure 32: New construction site in Da Lat in Ward 3



Figure 33: Connection point in front of Da Lat Flower Collection Center

The new construction site in Ward 3 in Da Lat is located 10 kilometer far from Da Lat city center which is connected to Duc Trong area and Don Duong area increasing flower production recent years. The new location has high efficiency of transportation such as facing to Mimosa

Street connecting to Da Lat city center with enough width for large sized trucks to drive. Moreover, highway road to Ho Chi Minh City is also adjoining.

The new site has been originally a place allocated by Da Lat city for construct residential buildings for low-income class therefore there are still 50 house holdings and farming lands are spattered. Although electricity and internet connection is available, it is necessary to maintain water supply system using river water for operating Flower Collection Center. As the first stage of construction plan, target of maintenance area size is 10 ha out of 25 ha. Land leveling cost is lower than the plan in Ward 11 since there are less and gently sloping area in Ward 3.



Figure 34: Receiving flower s at middleman



Figure 35: Packing area at middleman

4.7. 7th on-site activity

7th on-site activity has implemented from 26/11/2015 to 03/12/2015 in Da Lat, Ho Chi Minh City and Hanoi. Main activities of this visit was following three subjects 1) the feasibility study and discussion with DIDC conducted by 2 persons from outsourced JFE Engineering Corporation logistics system Division, 2) discussion about operation flow with grower group in Lam Dong Province and 3) meeting with SATRA for progress checking about their development plan. During the discussion between DIDC and JFE, we supposed the size of Da Lat Flower Collection Center and indicated work flow using tentative blue print.

Through the first feasibility study with DIDC, JFE and also outsourcing Design Company of DIDC, layout design of collection area, residence space and park/tourism area and tentative blue print with concerning work flow within 25 ha of new construction site were discussed.

SỐ LIỆU THỐNG KÊ VỀ HOA CẮT CẢNH NĂM 2014
(số liệu do Cục Thống kê Lâm Đồng cung cấp)

21/03/2015

Địa bàn	Loại hoa														TỔNG CỘNG	
	Hoa Layon (Gladiolus)		Hoa Hồng (Rose)		Hoa cúc (Chrysanthemum)		Hoa Cẩm chướng (Carnation)		Hoa đồng tiền (Gerbera)		Hoa Ly ly (Lily)		Hoa khác (other)		Diện tích (ha)	Sản lượng (1000c)
	Diện tích (ha)	Sản lượng (1000c)	Diện tích (ha)	Sản lượng (1000c)	Diện tích (ha)	Sản lượng (1000c)	Diện tích (ha)	Sản lượng (1000c)	Diện tích (ha)	Sản lượng (1000c)	Diện tích (ha)	Sản lượng (1000c)	Diện tích (ha)	Sản lượng (1000c)		
Tp. Đà Lạt	526,1	141 296,7	1006,0	293 958,5	1648,2	631 386,5	363,9	131 326,7	118,1	32 150,1	125,4	27 068,7	955,3	276 467,1	4743,0	1 533 654,1
H. Đơn Dương	43,6	8 976,6	0,8	333,0	844,6	271 520,4			3,6	2 262,5	16,6	4 012,0	47,6	9 025,7	956,8	296 130,1
H. Lạc Dương	7,0	1 845,0	296,1	88 933,6	92,3	41 172,9					69,0	14 767,0	114,0	40 069,6	578,4	186 788,1
H. Đức Trọng	616,3	88 819,3	2,4	631,0	95,0	29 532,9	4,3	1 290,0	7,4	2 319,5	13,6	2 906,0	90,2	24 909,0	829,2	150 407,1
H. Lâm Hà	10,0	2 295,2	5,4	1 824,7	0,4	131,0	0,3	135,0	22,5	9 689,3			87,4	27 772,6	126,0	41 847,1
Tp. Bảo Lộc													25,2	1 791,4	25,2	1 795,4
Cộng:	1 203,0	243 232,8	1 310,7	385 680,8	2 680,5	973 743,7	368,5	132 751,7	151,6	46 421,4	224,6	48 753,7	1 319,7	380 039,4	7 258,6	2 210 623,4

Figure 36: Flower production area and number of production in Lam Dong Province 2014 by region and product assortment

According data submitted by DIDC, floricultural production number in Lam Dong Province is 2.21 billion stems. DIDC predicts 2.02 billion stems produced in Lac Duong, Don Duong and Da Lat have possibility to bring up to the new Flower Collection Center as estimate. For these reasons, 1.8 billion stems of procurement is settled as a goal as long term plan. It is estimated as 80% of total production number in Lam Dong Province; 2.21 billion stems.

Whereas 1.8 billion stems of procurement is about 4.5 times of handling number of OTA Floriculture Auction, facility sized is estimated not only by number of stems but also maximum possible handling number per day. At OTA, maximum handling number in 2 ha area included car parking is 5 million stems per day which is about 2 times of normal transaction days. According to Vietnamese participants during the meeting, it should be estimated 1.5 times of normal transaction days in Viet Nam is needed especially for Tet season. As a result and agreement, about 4 ha of area size is required for the Flower Collection Center in Da Lat.

Total guaranteed area for the Flower Collection Center is 25 ha. Inside of this area it is needed to maintain 50 householders to relocate from this area and planned to build parks for tourists.

Inside of yellow line surrounded area is the planned construction site. Contour lines Northern part has steep hills and also Southern part has lower hills therefore the construction site is naturally depressed. According to DIDC, there is a small river in the middle of natural depression however water level becomes lower with higher density of domestic water pollution in the dry season. In the rainy season, water flow over 2 or 3 times during the season however these are not serious to cause a bid flood.

Lam Dong Architecture Consultancy considers area of Da Lat Flower Collection Center as both in red part (5.28 hectares) and pink part (3 hectares). However, it seems the small river between red and pink part divides each areas. Passing the bridge over two areas is one of solution plans however we as JEF and OTA rejected because of low logistics efficiency. Also it is considered shifting the position of the river for expanding red part into 1.5 ha.

Area size of red part is 150m from East to West and 254m from North to South. Whereas West part of North-South length is 150m, East part is only 104m. In this case, construction building might become thin and less functional. In case of shifting the river to South side, Eastern part of length can extend to 144m.

When considering work flow inside of the building it is preferable every function gather into one place. For this point, 7.5 ha of red part in former plan indicated by Lam Dong Architecture Consultancy is suitable. Additionally, JFE and OTA instructed to separate traffic line of transaction and moving line of residential people completely for keeping their safety. Because there is possibility people pass traffic road for entering residential area from Mimosa Street even in dangerous situation filled with big trucks.

Brown areas in the Northwest is the area to build the restaurants for the tourists and employees. Next to brown area, small triangle shaped red area does not use at this moment however it might be useful as parking area in the future.

We submit a simple blueprint of Da Lat Flower Collection Center.

4.8. 8th on-site activity

8th on-site activity was done from 12/07/2015 to 28/07/2015 in Da Lat. Da Lat city due to OTA received an invitation of Da Lat Flower Festival from Da Lat city and besides attending the festival project research continued. Though the eighth field activity, construction project of Flower Collection Center and OTA are well recognized and got higher presence. In addition, we continued to investigate work flow of the project especially about location of truck bars and the necessary number of people.

The purpose increasing presence of the project and OTA in Da Lat has successfully done by participating in Da Lat Flower Festival with appearing to various types of media (TV, newspapers), participated as a panelist at the conference and communicating during the party.



Figure 37: View of Da Lat Flower Festival -1



Figure 38:View of Da Lat Flower Festival -2

Main theme of the conference was about promotion, demand increasing and agro-tourism of agricultural products especially flowers in Da Lat. Mr. Pham S; Vice Chairman of Lam Dong Province People's Committee and Mr. Hai; Chairman of Lam Dong Province Bureau of industrial trade suggested about new flower distribution flow with constructing Flower Collection Center and clearly indicated as this project is going to be one of most important subject for improving flower production in Lam Dong.

Regarding about progress of the project, master plan included layout should have been submitted to Da Lat City and Lam Dong Province, within December 2015. It occurs late submission due to our date change however it has already completed except changing points.

At the meeting during the seventh field activity, layout of the building are concluded to be thin laying to East-West direction, however it is reconsidered by JFE to layout in Eastern part laying to South-North direction because of two reasons; 1) 4 m difference of elevation exists in East-West layout and 2) preventing from a river flood in West side. These new plans were explained and submitted to Lam Dong Architecture Consultancy for redesign.

We reconsider flooding risk from the water stream flowing along the south of the building. Although the construction site and neighboring land will be raised with earth fill during leveling and the height of the water stream becomes same with the one of the construction site, we will have a 6 meters height gap at the west side of the building even after the earth fill. If we include the foundation of the building, the height difference comes down in 3 meters, but we agreed to take away the height difference by digging the water stream deeper as we have to presume that “logistic flow at the Flower Collection Center cannot stop even for one day”, instead of that “one or two times flooding could be no problem.”

According to Mr. Luyen the director of DIDC, it is easy to employ about 100 personnel for labor force. As a reminder, usually in Vietnam, drivers are responsible for unloading and shippers are responsible for loading for shipment. Personnel for shipping has to be arranged.

4.9. 9th on-site activity

The 9th on-site activity was done from 25/05/2016 to 31/05/2016 in Hanoi, Da Lat and Ho Chi Minh. Main activities were a meeting with JICA Vietnam in Hanoi; a presentation on construction plan of the Flower Collection Center at the Da Lat City People’s Committee; a discussion about content on feasibility study of the Flower Collection Center. In addition, we visited middlemen in Da Lat, aiming for a recruit of potential operators at the Flower Collection Center. At the Da Lat City People’s Committee, Mr Hiep, the chairman, showed his opinion that the Flower Collection Center could contribute to improvement of income for flower growers; and his request to have a long-term vision taking the possible future expansion of the Center into consideration.

At the meeting with JICA Vietnam, as we decided at the Lam Dong Province People’s Committee meeting during the 5th on-site activity in August 2015, we explained that the facility in Da Lat would not have an auction function but be specialized in a collection function. Regarding the burden of investment fund, we had not decided how much we would owe but aimed to take an initiative as an advisor. JICA Vietnam passed a remark that they would have to look for other investors, if we would not be interested, and it would be difficult for us to take an initiative as long as we would allocate more than half of the whole capital for the Flower Collection Center.

The initial object of this 9th on-site activity was to recruit the potential operators of the Flower Collection Center, but it was replaced with a discussion with DIDC on feasibility study and a confirmation of schedule because DIDC received one week before our visit to Vietnam an instruction from the Lam Dong Province to finish the feasibility study by 15/07/2016.

At the Dalat people's Committee we conducted the presentation. Mr Hiep the chairman supported out presentation saying that the purpose of establishing the Da Lat Flower Collection Center was to abolish intermediary margins of middlemen and to properly grade flowers based on the standardized quality standards; and that he wanted to create the situation that the growers could get more profit when they could produce better quality flowers. On the other hand, he added to point out that the Da Lat Flower Collection Center must cooperate not only with the wholesale market in Ho Chi Minh but also with markets in Hanoi, Da Nang and so on.

Subsequently Ms Thuy from an engineering company explained about an area design in and around the construction site in District 3, Da Lat. The dimension of whole construction site is 34.9 hectares with 118 residential households, 1 kindergarten, 1 hospital and graves. There has a flood at least once in a year. Originally, the area was planned to be developed as a residential area, but not launched yet. And then, the present construction site had been selected in December 2015 (originally in District 11).



Figure 39: Presentation



Figure 40: Dalat flower collection Center construction site

The area ensured for the construction site is be about 12 hectares, and it dominates 30%. Yellow-painted area is the planned residential area and 76 households don't have to move

among 118 households. All residential houses are facing along a road with 12-meter width a. The Kindergarten and the hospital can stay there without any moves. 5.5 hectares in 10 hectare greening area doesn't have to be newly developed. Mr Hipe instructed to use the word "adjustment" instead of using "Resettlement" (When "Resettlement" is used, the approval from the Vietnamese government is needed). And he added that 20 hectare of land should be ensured expecting a future expansion and instructed that the operation would start from 5 hectare but further consideration should be needed for a long-term plan.

4.10. 10th on-site activity

The 10th on-site activity was done from 29/06/2016 to 02/08/2016 in Da Lat and Ho Chi Minh. Main activities were a (1) setting up a work-flow and construction design for construction plan of the Collection Center and (2) explanation to DIDC on pre-feasibility study including estimate of construction cost to be submitted to Lam Dong Province. And we (3) visited Department of Agriculture and Rural Development and Department of Investment and Development of Lam Dong Province, and (4) visited SATRA in Ho Chi Minh. We confirmed the delay in process with DIDC and considered re-scheduling.

We visited DIDC to explaining the pre-feasibility study submitted on 15/07/2016. We consolidated a floor plan and a construction design discussed together with JFE Engineering and DIDC in December 2015 as a master plan. Under the original schedule, after an approval of the master plan from Lam Dong Province, we would have finalized pre-feasibility study from February to April 2016, and afterwards planned to solicit for funds from investors and hold a tender of an operator. But at this moment, the master plan had not been approved yet. To summarize the situation below;

Table 8: Summary of 10 the on-site activity

Item	Focused content	Original limit	Situation
Master Plan	Floor plan and Construction design	Approval by Feb 2016	Submitted to Lam Dong Province, but not approved yet (absorbed in Pre-Feasibility Study?)
Pre-Feasibility Study	Estimate of cost and repayment of infrastructure and	Finished by Feb and approval by Apr 2016	Submitted to Lam Dong Province

	implementing workflow		
Feasibility Study	Boring survey measurement survey	Conducted Mar-Jun, approval by Sep 2016	Not started yet
Financial planning	Financial planning for the cost excluding initial cost and find sources	-	To be started after result of Pre-Feasibility Study
Recruit for operation staffs	Recruit personnel for operation at FCC	-	To be started after result of Pre-Feasibility Study

4.11. 11th on-site activity

The 11th on-site activity was done from 21/09/2016 to 28/09/2016 in Da Lat, Ho Chi Minh and Hanoi. Main activities were a (1) discussion in Da Lat about the 2nd invitation program and its members, (2) a meeting to discuss when the on-site seminar would be held, (3) a meeting with SATRA in Ho Chi Minh to discuss the flower distribution system, and (4) attending the public-private forum for the “3rd Japan-Vietnam Agricultural Cooperation Dialogue Public-Private Partnership”. At the meeting with SATRA we explained details of commercial flow and logistic flow under the new flower distribution system. They agreed clarified differences of roles between the Da Lat Flower Collection Center and Bien Dien wholesale market in Ho Chi Minh.

The term of 2nd invitation program was decided to be held in 4th or 5th week of November, and the expected breakdown of members was 2 from the administrators of Da Lat, 3 from growers, and 2 from middlemen. For growers to be invited, we left an arrangement with Da Lat Flower Association entirely up to DIDC, and planned to fix the member list by the beginning of October. We also left who we would send invitation letter to entirely up to DIDC (and Da Lat City).



Figure 41: Field of invited candidates for 2nd invitation program (rose)



Figure 42: Field of invited candidates for 2nd invitation program (carnation)

And in Hanoi, invited by the investment and cooperation group, international department of Japan's Ministry of Agriculture, Forestry and Fisheries, we attended the public-private forum for the "3rd Japan-Vietnam Agricultural Cooperation Dialogue Public-Private Partnership". We could expand human network.



Figure 43: Public-private forum

4.12. 12th on-site activity

The 12th on-site activity was done from 26/10/2016 to 03/11/2016 in Da Lat, Ho Chi Minh and Hanoi. Main activities were (1) a meeting with DIDC to discuss internal and external design of the Flower Collection Center, a plan for neighboring infrastructure, and a financial plan for project cost; (2) a meeting with members for the 2nd invitation program; (3) meetings in Ho Chi Minh with Seed Com (who planned to establish a new flower distribution system at their affiliated company, Cau Dat Farm in Da Lat) and SATRA; (4) a discussion with a financial institution in Hanoi. At the discussion with DIDC, we confirmed the details of construction cost, and also confirmed that it would have to be repaid from the operator to Lam Dong Province.

In Da Lat, we had a discussion with DIDC about feasibility study.

We agreed the schedule to finalize the feasibility study in the end of January. And we decided the dates for on-site seminar as from 04/01/2017 to 06/01/2017, requesting the Da Lat City People's Committee to be the chairman with participants invited with invitation letters sent from Da Lat City. We also confirmed the SATRA would arrange the seminar in Ho Chi Minh.

In addition, we had meeting with members who would join the 2nd invitation program, and discussed schedule and visa procedure.

4.13. 13th on-site activity

The 13th on-site activity was done from 29/11/2016 to 02/12/2016 in Da Lat and Ho Chi Minh. Main activity was a technical meeting to discuss the details about the Da Lat Flower Collection Center.

4.14. 14th on-site activity

The fourteenth field activity has done from 17/12/2016 to 23/12/2016 in Da Lat and Ho Chi Minh City for arrangements of seminar and confirmation of technical feasibility investigation

with DIDC. During the meeting with DIDC, seminar details such as location and invitee were arranged.

At Ho Chi Minh City, we held a meeting with SATRA to arrange a seminar in Ho Chi Minh City and requested to conduct a conference room. Mr. Luyen already requested the date of holding a seminar as in the afternoon in 07/01/2017. The seminar room is settled in Binh Dien market by SATRA. In total 10-20 people from Da Lat City People's Committee and buyers at Binh Dien market are invited.

At a meeting in Da Lat, details of seminar topics, invited guests, seminar agenda, and cost are finalized between DIDC. The date of final seminar is settled as holding in 05/01/2017 in Da Lat and also in 07/01/2017 in Ho Chi Minh City. The purpose of the seminar is to make stakeholders related the project of constructing new Da Lat Flower Collection Center understand and share basic idea of the project. As details introducing the Dalat Flower Collection Center including discussion of cost effectiveness and post-harvest management

The seminar in Da Lat starts at 8am at the conference hall of Da Lat City People's Committee with maximum 300 guests are invited arranged by Da Lat Trading Bureau. Invited guests are from Lam Dong Province are Trade Bureau, Department of Agriculture Rural development, Tourism Office, Office of Science and Technology, representative from Grower's Union, Da Lat Flower Association, Investment Center, Tourist Center, Plant Quarantine office, Agricultural Rural Development Division, Agricultural Quality Control Division, Agricultural Extension Center, ODA Projects Department, Lam Dong Province TV station, Lam Dong Province Newspaper. Also people from same sectors of Lam Dong Province and each about 10 growers are invited from Da Lat city, and other districts; Lac Duong, Duc Trong, Lam Ha. Moreover, governmental representative of each Wards; Da Lat City in Ward 3,4,5,7,8,9,10,11,12 and Xuan Tho, Xuan Truon and Ta Nung, growers from Ward 5,7,8,11,12 and Xuan Tho, middlemen from Ward 3,4,9,10 and SATRA. Da Lat City Agricultural Center makes an invitation list of growers and middlemen and send invitations. For other guests, Da Lat City People's Committee organize and send invitations.



Figure 44: Conference hall of Da Lat City People's Committee



Figure 45: Inside view of the conference hall

The seminar in Ho Chi Minh City starts at 14pm at a meeting room in Binh Dien market. Guests are representative form Ho Chi Minh City Trade Bureau, SATRA, Binh Dien market buyers, Trade Bureau and Agricultural Rural Development Bureau in Lam Dong Province and Da Lat City People's Committee, Da Lat Flower Association, DIDC and growers and middlemen in Da Lat. SATRA agreed to make in invitation list, send invitation and prepare meeting room. Co Phan Dich Company decorates meeting room additionally.

The seminar proceeds by Da Lat People's Committee, Da Lat City Trade Bureau, Da Lat City Agricultural Rural Development, Da Lat Flower Association and OTA floriculture auction and expected to take in total 4 hours.

4.15. 15th on-site activity

The fifteenth field activity has done from 03/01/2017 to 10/01/2017 in Da Lat and Ho Chi Minh City for implementing final seminars in each cities.

The new logistic flow of ornamental flowers got well understanding and agreement from participants throughout two seminars. Whereas low productivity was indicated as a concerning point even it was not related with logistical function at the seminar in Da Lat, Da Lat People's committee mentioned supporting plan of agricultural development. Moreover, some middlemen commented possibility of raising transportation cost caused by new investment for the Flower

Collection Center. It solved explaining functional details of Flower Collection Center that keeping quality level leads to raise price of flowers which can cover logistic cost.

In addition to representatives of Da Lat city People's Committee and other governmental officers, growers and middlemen were main target for the seminar in Da Lat as production side. Another seminar in Ho Chi Minh City was held mainly for middlemen as consumer side. Mr. Luyen; Director of DIDC explained the master plan of constructing Flower Collection Center based on approved contents by Lam Dong People's Committee. In addition, Mr. Kato; Executive Officer of President Office of OTA Floriculture Auction indicated new logistic system and distribution flower of the Da Lat Flower Collection Center, and Mr. Kiryu; Director of OTA Floriculture Auction Research Institute explained post-harvest management. SATRA also mentioned about basic plan of new flower wholesale building at Binh Dien market.

DIDC has done total coordination and preparation for the seminar in Da Lat. 110 people out of 220 invitees participated who are mainly growers, middlemen and other parties of agricultural sectors.



Figure 46: Participants to the seminar in Da Lat



Figure 47: Presentation by Mr. Luyen

All participants at the seminar held in Dalat were basically agreed to cold supply chain via Flower Collection Center and post-harvest management and understood these new system investment can lead improvement of flower quality. On the other hand there were some complains from small growers about difficulties of funds borrowing without mortgage, low quality of pesticide, fertilizer, seed, and water pollution of agricultural water source. Although

these were not related with main theme of the seminar, Mr. San; Vice Chairman of Da Lat City People's Committee indicated supporting measure of agricultural development for improving environment of agricultural fields and such as seed virus inspection facility and governmental fund support. These indications calmed small growers down and got understanding.

The seminar in Ho Chi Minh City has held in office building at Binh Dien market owned by SATRA. SATRA coordinated total arrangement of the seminar as well as inviting participants. About 25 participants; representative of Binh Dien market, buyers in Ho Thi Ky market and Dam Sem market took their sheet around a round table in the middle and another 25 participants also joined the seminar with seating behind.



Figure 48: Buyers from each markets



Figure 49: Presentation by Kato

As well as the seminar in Da Lat, participants agreed and understood about cold supply chain via Da Lat Flower Collection Center and post-harvest management help to improve quality of flowers.

On the other hands, there were some negative opinions from buyers in Ho Thi Ky and Dam Sen markets against possibility of logistic cost lifting and procurement flow of one trucking all flowers to Binh Dien market. Whereas buyer's concern loose packing leads low efficiency of trucking and logistic cost lifting, we made them clear as it is possible to decrease total cost with improving quality of flowers. Because loose packaging and cold supply chain can decrease product loss caused by damages and high qualified flowers can be priced higher. Regarding procurement flow to Binh Dien market, optimization of trucking, consolidation and sharing of information helps to recognize and control balance of supply and demand. Buyers reached to understand these business flows to connect effective sales.

4.16. 16th on-site activity

The sixteenth as last field activity has implemented from 15/05/2017 to 20/02/2017 in Hanoi, Ho Chi Minh City and Da Lat. Though the last visit, time schedule as next steps was confirmed to JICA Vietnam Office and preparation for tender was discussed to DIDC.

We got an advice from JIVA Vietnam Office it is better to remind by official letter to Lam Dong Province and Da Lat City for establishing a role for operation of Da Lat Flower Collection Center. Moreover, OTA Floriculture Auction confirmed to report progress work related this project to JICA Vietnam office even after ending official support contracted program from JICA Japan office.

According to Mr. Luyen mentioned, master plan of the project has already listed of investment plan of Vietnam Central Government and waiting approval. It is promised to approve within year 2017 and to implement the tender for deciding an operator in March – April 2018.

4.17. 1st invitation program to Japan

The first invitation program to Japan has implemented from 19/04/2016 to 24/04/2016. The purpose of the program is to explain and encourage Lam Dong and Da Lat representatives to understand about flower distribution system and surrounded environment related with governmental scheme in Japan. It is because of necessity of governmental cooperation to establish a sector in charge of operation and supervision which can guarantee transparency and fair pricing.

To accomplish the goal, this invitation program is planned participants to show product supply chain from growers to consumers for better understanding of roles of auction/wholesale market in Japan. Additionally, discussion with administration department of Tokyo Metropolitan Government wholesale market division; administrator of OTA market settled to deepen knowledge of governmental function and work flow. Below is a name list of participation for the program.

Table 9: Name list of participants

	Full name	Job title
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Mrs.	Huynh Thi Thanh <u>Xuan</u>	Chairman of Da Lat City Communist Party
Mr.	Pham S	Deputy Chairman of Lam Dong Province People's Committee
Mr.	<u>Hai</u> Huynh Ngoc	Director of Lam Dong Province Trade Bureau
Mr.	Le <u>Minh</u> Van	Director of Lam Dong Province Ministry of Agriculture and Rural Development Bureau
Mr.	Phan Van <u>Dung</u>	Deputy Director of Lam Dong Province Investment Department
Mr.	Ton <u>San</u> Thien	Deputy Chairman of Da Lat City People's Committee
Mr.	Duong <u>Duc</u> Ngoc	Director of Da Lat City Economic Department
Mr.	<u>Luyen</u> Nguyen Vinh	Director of DIDC
Mrs.	Nguyen Hanh Thi My	Director of Da Lat City Agricultural Center
Mr.	Nguyen Cong Duc	President of Da Lat City Producers Union

Table 10: Schedule

Date	Contents	Transportation and location
04/18 (Mon)	Departure from Da Lat via Ho Chi Minh City	VN1383
04 / 19 (Tue)	Arrival at Narita Airport Visit cut flower importer; Classic Co.,Ltd Visit Joyful Honda Visit OTA Floriculture Auction to see night work Overnight in Tokyo	VN300 - Company car Narita city, Chiba Prefecture Tomisato-Shi, Chiba OTA market Art hotels Omori
04 / 20 (Wed)	Visit OTA market / fruits and vegetable division Visit the OTA Floriculture Auction Seminar at OTA Floriculture Auction Visit flower shop specialized business occasion Visit flower processing company Visit flower shop (Aoyama flower market, etc.) Overnight in Tokyo,	Company car OTA market OTA-Ku Kamata Tokai, OTA-Ku Aoyama Minato-ku Art hotels Omori

04 / 21 (Thu)	Visit growers association in Shizuoka Overnight in Tokyo,	Company car - Shizuoka Art hotels Omori
04 / 22 (Fri)	Visit Tsukiji fish auction market Discussion at OTA Floriculture Auction Discussion at Tokyo Metropolitan Central wholesale market Division Meeging with Dream incubator Inc. (Kato) Overnight in Tokyo,	Company car - Tsukiji fish market - OTA market Tokyo Metropolitan Government building OTA-Ku Oomori Art hotels Omori
04/23 (Sat)	Sightseeing in Tokyo Overnight in Tokyo,	JR, subway
04 / 24 (Sun)	Departure from Narita Airport to Da Lat Arrival at Da Lat via Ho Chi Minh City	Company car VN301 VN1382

Discussion at OTA was proceeded about location of construction site, cooperation with SATRA, investment and operator. Location of construction site has already decided by Lam Dong Province and Da Lat city as in Ward 3, and SATRA also started to make a draft of memorandum with Lam Dong Province and Da Lat city. About investment, Kato emphasized that Lam Dong Province should invest at least over half of capital since governmental supervision is necessary for clean operation. Mr. Pham S answered to have a discussion with Vietnamese Central Government after back to Vietnam however it was not clear about possible schedule for budgeting. It is advisable middlemen should be operators since they are the only people having high ability of deciding fair price with understanding quality of flowers as Kato suggested. There were no negative opinion against it however it was unclear whether participants were enough recognized importance of deciding suitable person as an operator.



Figure 50: View of auction room at OTA



Figure 51 Seminar by Mr.Kiryu

We felt that participants are strongly motivated with asking many questions however these questions seemed only having ‘push’ type of thinking from one side. They basically have high confidence on their products and believe that it is possible to sell more when they have high logistical infrastructure.

As a good point, whereas previous discussions between Lam Dong Province and Da Lat city has been always stopped until thinking about constructing a building, it went forward to think about operation flow and effectiveness for growers through this invitation program. Participants seems to start recognize necessity of improving flower distribution flow for developing flower industry in Lam Dong Province.



Figure 52: Import trading company classic's quality management Department



Figure 53: Tokyo flower tour



Figure 54: Visit rose grower in Shizuoka



Figure 55: Visit flower collection center in Shizuoka



Figure 56: Tsukiji fish auction market (Tuna auction)



Figure 57: An article of Nikkei MJ news paper (25/04/2016)

4.18. 2nd invitation program to Japan

The second invitation program to Japan has implemented from 23/11/2016 to 27/1/2016. Main task of this visit was to explain and encourage participants to understand function of flower distribution flow in Japan especially about how Japanese auction market guarantee transparency and fairness of pricing. Moreover, it is also necessary to understand about product grading and post-harvest management work flow in supply chain. To ensure these subject to understand, the program scheduled settle to visit all steps from growers to retailers. Participants for this program is indicated blow.

Table 11: Name list of participants

	Full name	Job title
Mr.	Vo Ngoc Trinh	Deputy Chairman of Da Lat People's Committee
Mr.	Nguyen Xuan Lap	Deputy Director of DIDC
Mr.	VU Dinh Phuc	Flower grower
Mr.	Nguyen Dang Hien	Flower grower
Mr.	Le Duy Quy	Flower grower
Mr.	Nguyen Hoang Duc	President of Thanh Mai Flower (middleman)
Mrs.	Le Thi Hanh	President of Hoa Hanh; (middleman)
Mr.	Dihn Quang Ha	Previous Chief Officer of Da Lat Flower Association (Candidate Manager of Da Lat Flower Collection Center)
Mrs.	Dang Hoang Van Ha	Translator; Chief Operation Manager of Da Lat Academy

Table 12: Schedule

Date	Contents	Transportation and location
11 / 22 (Tue)	Dalat - Narita via Hanoi	VN1383
11/23 (Wed)	Arrival at Narita Airport Visit plant quarantine at Narita Airport Visit cut flower importer; Classic Japan Co.,Ltd Overnight in Tokyo,	VN300 - Company car Narita city, Chiba Prefecture Shibayama, Chiba Prefecture

		Art hotels Omori
11 / 24 (Thu)	(Rescheduled due to snowfall) Sightseeing in Tokyo Overnight in Tokyo, Visit OTA Floriculture Auction to see night work	Company car Art hotels Omori
11 / 25 (Fri)	Visit Tsukiji fish auction market Visit OTA market / fruits and vegetable division Visit OTA Floriculture Auction Seminar at OTA Floriculture Auction Visit Flower Shop (Aoyama flower market, etc.) Overnight in Tokyo,	Company car JR, subway Art hotels Omori
11 / 26 (Sat)	Visit growers association; Gunma Maebashi rose Union Departure from Haneda - Da Lat	Company car
11 / 27 (Sun)	Arrival at Da Lat via Ho Chi Minh City	

There were more participants directly working in flower industry when compare with the first invitation program therefore they had deeper interests in technical matters. On the other hands it is unclear that if participants recognized over view of pushing up value chain.



Figure 58: Seminar at OTA Floriculture Auction



Figure 59: Mr. Trinh; Vice Chairman and President of OTA Floriculture Auction Mr. Isomura

Most of participants for the second invitation program, especially growers and middlemen, already had specific knowledge or experience of export. They tended easily to think that they already can do same things as Japanese growers or wholesalers do. Moreover, some of them seem to think they are even better. For these reasons it is necessary to explain details of post-harvest management as scientifically at the final seminar in Da Lat and Ho Chi Minh in January 2017.



Figure 60: Cut flowers plant quarantine



Figure 61: Discussion with cut flower importer



Figure 62: Cut flower distribution machine of OTA Floriculture Auction



Figure 63: Vegetable and fruits auction at OTA market



Figure 64: Visit flower shop in Tokyo

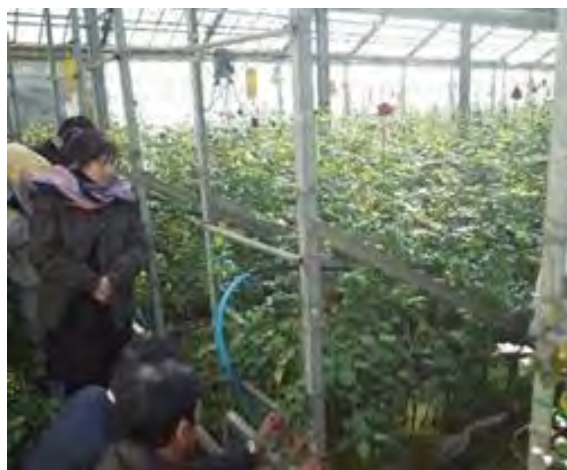


Figure 65: Visit rose grower in Gunma



Figure 66: Cut flower Grading



Figure 67: Condition check of packaging

Chapter 5 summary of the project (evaluation of results)

5.1. Achievements of this project

After continuing explanations about importance of new flower distribution system with patience through this project, Lam Dong Province People's Committee and Da Lat City People's Committee grew understandings and officially approved the project for establishment of the Da Lat Flower Collection Center with the official letter dated 24/8/2016 issued by the Lam Dong Province People's Committee. And in addition, its construction site has been determined in district 3, Da Lat City, with the official letter dated 19/10/2015 issued by the Lam Dong Province People's Committee.

Although there were skeptical opinions about "Establishment of flower wholesale market" at the meeting of the Lam Dong Province People's Committee (where the chairman, Mr. Viet was absent) on February 2015, the next month the chairman Mr. Viet clearly announced that the Lam Dong Province took the project for "Establishment of flower wholesale market" into the strategy of development for agriculture in Lam Dong Province at the "Lam Dong Province agricultural business networking workshop".

At the invitation programs held twice, participants understood (1) how transparent and fair pricing system was secured under control of administrative offices in the flower distribution system in Japan, and (2) each supply-chain partner in the flower industry in Japan took care in quality control and strictly observed post-harvest management.

And we hold seminars to explain the project of Da Lat Flower Collection Center and the new flower distribution system in Da Lat and Ho Chi Minh; respectively (i) targeting small-scale flower growers and middlemen in production areas in Da Lat; and (ii) targeting middlemen in consumption areas in Ho Chi Minh.

At the seminar in Da Lat, it seemed difficult for participants to understand the new schemes of centrally controlling cold-chain system and post-harvest management with few questions after the seminar, but we could hear positive expectations for the new trade and logistic flow which could replace the present exploitative distribution system by middlemen. And at the seminar in Ho Chi Minh, some strong concerns were expressed for an increase of transportation cost in the new flower distribution system, because it would worsen loading efficiency during transportation by packing neatly not to damage flowers, comparing with the present way of putting as many as flowers into a box. Those concerns were narrow views in the point that the joint collection, the

joint shipment and the joint delivery in a larger truck could decrease the cost, but eventually we could reach the conclusion that we should support for flower growers and consider development of whole flower industry in Vietnam after discussions with those extremely conservative middlemen to any changes.

5.2. Achievements of this project (the business side) and the remaining issues and resolution policy

Table 13 Achievements of this project and the remaining issues and resolution policy

#	Task	Activity plan and Result																				Status of achievements and evaluation	Remaining issue and policy for solution
		1st on-site 12. 2014	2nd on-site 02. 2015	3rd on-site 03. 2015	4th on-site 05. 2015	5th on-site 08. 2015	6th on-site 10. 2015	7th on-site 11. 2015	8th on-site 12. 2015	9th on-site 05. 2016	10th on-site 07. 2016	11th on-site 09. 2016	12th on-site 10. 2016	13th on-site 11. 2016	14th on-site 12. 2016	15th on-site 01. 2017	16th on-site 02. 2017	1st inv-prog 04. 2017	2nd inv-prog 11. 2017				
1	Agreement and/or approval																				Fin	<ul style="list-style-type: none"> Get approval of our involvement in preparation for construction design of FCC 	
																					Fin	<ul style="list-style-type: none"> MOU with Lam Dong Province 	
2	Understanding of importance of post-harvest																				Fin	<ul style="list-style-type: none"> Promote understanding of importance of quality control and link to practice Direct instruction in some farms 	
3	Selection of commercial flow																				Fin	<ul style="list-style-type: none"> Select a major receiver in HCMC Selected SATRA as a major receiver 	
4	Investigation of market / needs																				Fin	<ul style="list-style-type: none"> Show quantitative data of market needs Included in FS 	
																					Remain	<ul style="list-style-type: none"> Promote understanding among 3 about profitability Deepened at seminars and invitation progms 	Still many not understanding, Expect Lam Dong and Da Lat continue to promote understanding
5	Ensurance of profitability																				Fin	<ul style="list-style-type: none"> Calculation of investment, Repayment model Included in FS 	
6	Calculation of investment																				Fin	<ul style="list-style-type: none"> Fix details of FCC and set operation flow Included in FS 	
7	Set up rules & regulations																				Remain	<ul style="list-style-type: none"> Clarify roles in making rules and regulations 	Not finished. Further support needed
8	Alliance with biz partner																				Remain	<ul style="list-style-type: none"> Alliance for cash settlement 	Not finished. Further discussion needed with SATRA

5.3. Achievements of this project (business terms)

We have expressed that we will join the tender to choose the operator of the Da Lat Flower Collection Center, expected to be held by the Lam Dong Province People's Committee. And we have got a verbal agreement from SATRA about cooperation to build a new flower trade and logistic system with the Bieh Dien market in Ho Chi Minh.

5.4. Remaining Issues and solution plan

We here discuss achievements and progresses for development issues picked up in “2.1.3 bottlenecks preventing further expansion of production in Da Lat flower production area.”

1) Small-scale business

We got a comment from one grower who joined the seminar in Da Lat who was a small-scale flower grower that the pricing determined by the middlemen were very unclear and he positively expected an introduction of the new flower distribution system. We can guess that the number of growers is increasing who gradually understand the importance of increasing “bargaining power of suppliers” by collective supply from many small flower growers.

In order to spread such an idea mentioned above, we made consideration to choose influential growers to neighboring growers, but we have not yet led to obtaining understanding from majority of growers and middlemen about significance in the new flower distribution system. It is necessary to find any opportunities to have an explanation to increase presence of the Da Lat Flower Collection Center.

2) Incomplete value chain

It is indispensable to build a strong cooperation between the Da Lat Flower Collection Center as a supplier and the SATRA's Bien Dien wholesale market as a demander. And the fair and transparent pricing system must be secured in order to clarify each added value at each supply-chain partner.

We have got a verbal agreement of cooperation with the Bien Dien wholesale market, but has not yet reached an exchange of the “memorandum of understanding”. It seems to take more time for SATRA to make a decision-making, because they are recalculating the efficiency of the Bien Dien wholesale market project as they are in the process to transform themselves from the

government-managing enterprise of Ho Chi Minh City to the semipublic enterprise. In any case, we must continue to have talks with SATRA about the cooperation.

3) Lack of post-harvest management

At present, most growers are not interested in the post-harvest management, but we can find two types of middlemen; one type insists that the post-harvest management is useless, and another request us to provide more information about the management.

This project is premised on the assigning the Da Lat Flower Collection Center to centralize the post-harvest management, because the growers cannot do it by themselves with the constraints of capital and facility. It is difficult to show the advantage of post-harvest management before having the Da Lat Flower Collection Center, but we try to show the difference in quality for growers' understandings by test shipments to deliver flowers in cold trucks after the management.

4) Lack of consciousness of intellectual property right

Chapter 6 Business implementation plan after this project

6.1. Objectives and goals of business

6.1.1. Expected business outcomes (contribution to the target country, region and social and economic development)

We can eliminate bottlenecks preventing the growth and development of the Da Lat flower production area (as described in 2.1), after a broad recognition of the new flower distribution system where the Da Lat Flower Collection Center will work properly in cooperation with the Bien Dien wholesale market in Ho Chi Minh City.

Even a small flower grower can increase his bargaining power to negotiate pricing with middlemen after forming a collective supply through a joint collection and a joint shipment as functions of the Da Lat Flower Collection Center. And we can also provide small flower growers with high-quality seeds, pesticides, fertilizers and other materials which small flower growers cannot obtain at present, as the Collection Center can negotiate price, inspect quality and purchase them in a large lot as a representative of growers.

The most important point to accomplish the value chain is to make the added value clear at each supply-chain partner. The Da Lat Flower Collection Center will disclose information through internet of orders from buyers at markets including Bien Dien wholesale market in Ho Chi Minh and of invoice prices in consignment transactions. A protocol must be prepared to set mandatory reporting of transactions, prohibition of two-tier pricing and so on; and a third party must have inspections based on the protocol to secure transparent and fair pricing by for example checking transaction details and having a financial audit every year.

And about post-harvest management, as the Da Lat Flower Collection Center will centralize the management for all flowers collected, it can be realized that the cost becomes lower comparing with the case each flower grower sends their flowers to buyers, and vase lives of flowers can be longer.

After removing those bottlenecks mentioned above, even the small flower grower can have opportunities to get higher added-value as a reward of his effort to improve quality of flowers. As this price incentive becomes broadly recognized among growers, the production quality of flowers in the Da Lat flower production area will be bottomed up.

In Vietnam, growers – especially private-operating growers – tend to decide their cultivation plans emulating neighboring growers’ cultivation plans without any investigations in the market trend or long-term cultivation plans, under the situation that they can get only limited information on price movements in the consumption area. (Sometimes, those growers illegally adopt young plants from neighboring growers for propagations.) And eventually, the price often becomes collapsed because many growers harvest and ship out the same variety of flower at the same timing. Then, after experiencing this price collapse, growers stop growing the variety, and the price often sharply rises in the next cultivation (seasonal) cycle. Market-price movement of flowers in Vietnam is volatile repeating price collapses and sharp price rises.

The Flower Collection Center will disclose pricing information for example on internet, and even private-operating growers can obtain such information. Although it needs accumulation of information for a certain term to forecast the market trend, growers can make their cultivation plans based on the information and the volatility of market prices can become lower.

And another problem is that authorities at agricultural departments of Lam Dong Province and Da LAT City cannot obtain statistical information. (Figures shown on this report are also predicted values.) Because agricultural income can get tax-exemption, administrative offices cannot acquire accurate information of distributing amount both in number of stems and on monetary base. After an introduction of the Da Lat Flower Collection Center, authorities at agricultural departments of Lam Dong Province and Da LAT City can get information collected at the Collection Center of in which areas and how much each flower variety is being grown, and can utilize that information in the way that they can provide planned guidance to growers. In this point as well, the Collection Center gives an effect to lower the volatility of market prices.

6.1.2. Expected outcomes through business activities

1) Potential of export

As we discussed in 6.1.1., we, as a candidate of operator at the Collection Center, plan to start exporting flowers to Japan, after we can acquire ability to sort out enough amount of good quality flowers.

At present, the planting area for flowers in Japan and the shipment amount remain in downtrend, on the back of increase in import flowers, decrease in number of growers and so on.

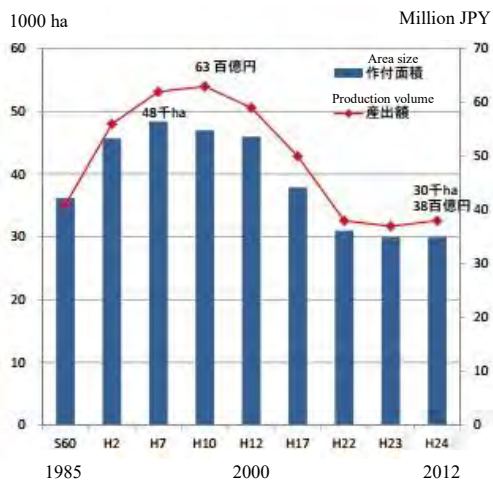


Figure 68: Japan's domestic flower production amount and acreage⁵

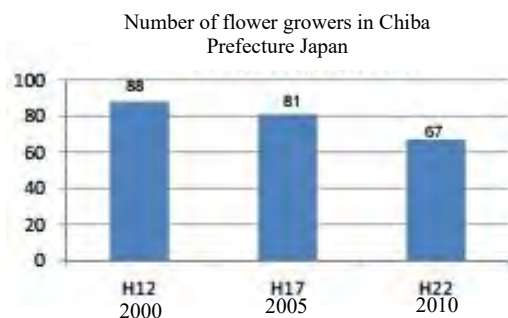
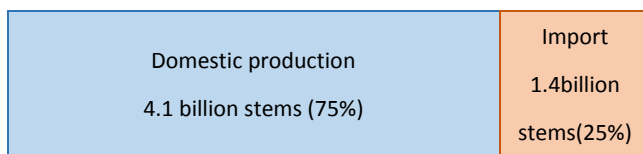


Figure 69: Trends in the number of flower growers⁶

Import ratio of flowers is 25% in terms of volume, and it is especially high in carnations, roses and chrysanthemums. With regard to the percentage of import by each country, main exporters are Colombia, Malaysia and China and so on.

Structure of Demand vs Supply for cut flowers (2012)



Import ratio by variety

Variety	Import ratio	Import quantity (billion)
Carnation	52%	3.5
Rose	23%	0.8
Chrysanthemum	17%	3.2

Figure 70: Demand and supply of cut flowers⁷

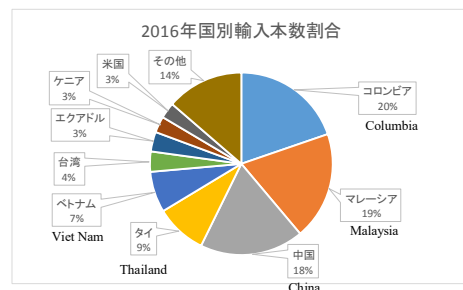


Figure 71: Percentage of import by country⁸

⁵ Reference: Statistic dept., Ministry of agriculture, forestry and fisheries; "Statistics for agricultural production and income", "Statistics for arable land and planting area", "Statistics for shipped floricultural production", "Survey of flower production" (Production Bureau)

⁶ Reference: Ministry of agriculture, forestry and fisheries; "Year 2000, 2005, 2010 World Census

⁷ Reference: Japan's Ministry of agriculture, forestry and fisheries; "Statistics of shipment of Flower production", "Statistics of plant quarantine"

The degree of dependence on flower import is expected to grow further, with a decrease in domestic production and shipment amount in Japan. However, the production amount in Colombia, as the biggest importing country, is declining due to urbanization in its flower production areas; it is also difficult to expect an increase of flower production in Malaysia, the 2nd biggest importing country, due to residents and resorts development in the major production area of Cameron Highlands.

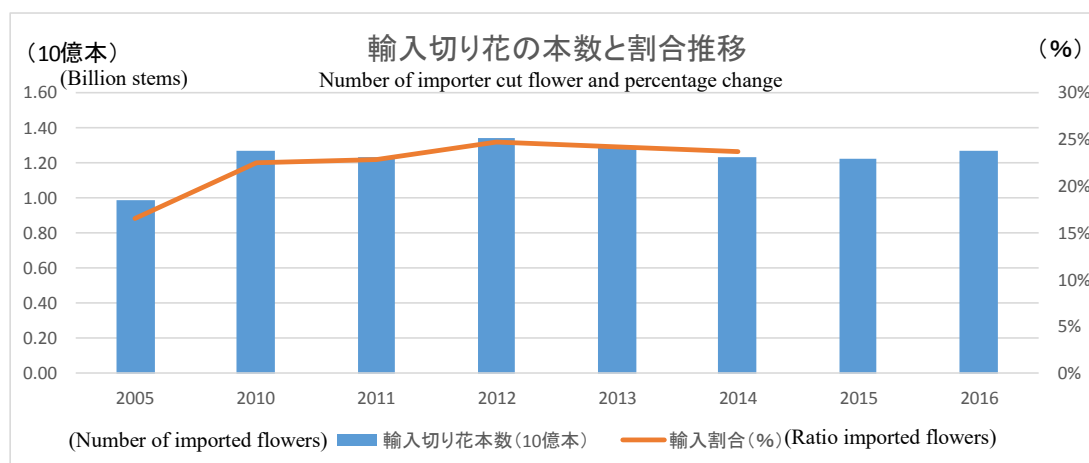


Figure 72: The number of imported cut flowers and percentage change <except Cleyera japonica>⁹

Under such circumstances, we have a large expectation for the Da Lat flower production area as flower production can be potentially expanded there. When we look at changes in import amount in number and on monetary base from 2011 till 2015, we can find an increase of import from Vietnam in Chrysanthemum, Orchid, and Lily.

Lily shows the largest increase, but lilies cultivated in the Da Lat flower production area are mostly pink or yellow varieties, and we can find little amount of white varieties which are highly demanded in Japan's market. While an increase in import of lilies will be limited, chrysanthemums – 30% market share - and orchids – demand increasing for funerals – can have a potential demand in Japan.

⁸ Reference: Japan's Ministry of agriculture, forestry and fisheries; "Statistics of plant quarantine"

⁹ Reference: Ministry of agriculture, forestry and fishery: "Statistics of production", "Statistics of plant quarantine"

2015年の品目別輸入本数、金額、金額成長率

キク属 Chrysanthemum				Orchid ラン類				バラ Rose			
国名	2015輸入本数 (本)	2015金額 (千米ドル)	金額成長率 2011-2015 (%)	国名	2015輸入本数 (本)	2015金額 (千米ドル)	金額成長率 2011-2015 (%)	国名	2015輸入本数 (本)	2015金額 (千米ドル)	金額成長率 2011-2015 (%)
Total	297,586,914	106,711	-7	Total	58,232	58,232	-8	Total	61,241,528	19,728	-6
MY	183,350,190	69,467	-8	TH	22,595	22,595	-10	KE	23,045,113	8,713	0
VT	57,953,279	17,525	13	TW	20,017	20,017	-2	CO	6,601,949	2,935	3
CN	44,509,990	15,505	-8	NZ	6,063	6,063	-13	EC	3,387,994	1,932	-7
				VT	5,254	5,254	5	ID	12,717,768	1,604	-10
				MY	2,726	2,726	-21	KR	4,968,648	1,481	-23
				Other	1,577	1,577	-	VT	4,706,770	1,252	-2

カーネーション Carnation

国名	2015輸入本数 (本)	2015金額 (千米ドル)	金額成長率 2011-2015 (%)
Total	342,138,803	89,925	1
CN	220,960,817	64,738	0
EC	31,369,450	7,602	30
VT	9,702,940	2,019	1

ユリ Lily

国名	2015輸入本数 (本)	2015金額 (千米ドル)	金額成長率 2011-2015 (%)
Total	6,696,571	3919	-19
KR	6,139,076	3558	12
VT	378,390	302	176
EC	93,200	38	-15

備考：コチョウラン Phalaenopsis

国名	2015輸入本数 (本)	2015金額 (千米ドル)	金額成長率 2011-2015 (%)
Total	1,350,191	3,274,524	-
TW	741,983	2,126,103	-
VT	604,539	769,281	-
CN	1,188	379,140	-

*本数データを推計することができない。
*ラン類についてはベトナムからは主にコチョウランが日本へ輸出実績があり、本数データを抜き出した。
*成長率は計算できず

Figure 73: Import amount and its growth rate < from2011 - 2015 >¹⁰

Exporters of flowers from the Da Lat flower production area to Japan are limited to HAS Farm mentioned above, a Taiwanese-capital owned Phalaenopsis production corporation, a Japanese-capital owned Chrysanthemum and Carnation production corporation, Thai-capital owned Chrysanthemum production corporation, a Vietnamese Orchid production corporation (technically supported by a Danish corporation) and so on.

3) Supply of high-quality seeds and other materials.

A lot of Dutch, Japanese, Thai capital-owned fertilizer and pesticide companies, and those Vietnamese agents are doing business activities in the Da Lat flower production area. However, it is still difficult for small private-business growers to get high-quality seeds, fertilizers and pesticides by a small amount, and they cannot help using degraded seeds and bulk products with uncertain quality. It is almost impossible for private-business growers to have a scientific examination whether the virus can be found in the seed, because it is very expensive. We have a subsidiary company dealing with seeds and production materials, and can export and supply better-quality seeds and materials.

6.2. Business development plan

¹⁰ Reference: The Japan's Ministry of agriculture, forestry and fisheries; "Statistics of plant quarantine" and WTO International Trade Center

6.2.1. Business overview

We will have 3 different revenue sources; (1) Revenue from operations of the Da Lat Flower Collection Center, (2) Revenue from export (Japan as a target country), and (3) Sales to growers of seeds, pesticides and fertilizers.

6.2.2. Business targets

At present, a share of flowers shipped from Lam Dong Province to Ho Chi Minh accounts for 60% (when we limit it to the Da Lat flower production area, the share increases up to 80%). As the most important supply-chain in terms of commercial and logistic flow, we emphasize relationship building with SATRA who manages the Bien Dien wholesale market in Ho Chi Minh. Afterward, we will a partnership with each large wholesaler or middleman in Hanoi, Da Nang, Can Tho to establish a distribution hub.

6.2.3. Business organization

We make it a halfway goal to become an operator of the Da Lat Flower Collection Center through the expected tender. Based on the operation protocol approved by Lam Dong Province and, Da Lat City (protocol must be prepared among Lam Dong Province, Da Lat City and us), we will make a report of collection amount and traded price to Lam Dong Province and Da Lat City. At the same time, Lam Dong Province and Da Lat City will have periodic audits to the Collection Center whether operations are properly done.

6.2.4. Business development schedule

The infrastructure development plan, including the project of the Da Lat Flower Collection Center, is now being in hands of the Vietnam central government. We set the schedule below supposing that we can get an approval by the end of 2017. If approval is delayed, the schedule will be also delayed.

6.2.5. Conflict situations

Establishment of supply chain linked between the Collection Center in the production area and wholesale market in the consumption area is a new business model and we cannot find any competitor in Vietnam. But the Dutch flower industry participants - the world's largest player in the flower industry – are interested in the Da Lat flower production area, and sent missions for investigations in September 2103 and April 2014, arranged by the Dutch Chamber of Commerce.

Comparing between the Japanese flower wholesale market and the Dutch flower wholesale market, operations are very similar, but what makes the two decidedly different is that the Japanese wholesale market stands at the neutral position between growers and buyers in the supply chain, but on the other hand the Dutch flower wholesale market is run by the Dutch growers' cooperative. Whereas the Japanese tries to adjust conditions such as a quality standard searching a common ground between growers and buyers, the Dutch flower wholesale market decides it one-sidedly. Under the present situation of the Vietnamese flower industry, the Japanese practice fits better than the Dutch, because there are large quality differences among growers' products and it is difficult to establish a unified standard.

6.2.6. Issues and resolutions on business deployment

The tender to determine an operator of the Da Lat Flower Collection Center is the most significant issue for our business development. Our business development plan cannot be drawn, as long as we will not be chosen as the operator. Here, we discuss apparent issues to be dealt with before the tender.

1) Conditions (requirements) for tender

It is definite that the tender will be held to determine the operator for the Da Lat Flower Collection Center, because it is regulated to have a tender for the project where the budget exceeds 500 million VND based on the Vietnamese domestic law. We have strong uncertainties about the tender where conditions (requirements) for the tender will be decided by a third party who will be appointed by Lam Dong Province.

Even in case we are not elected as the operator, we can trade with local growers with limited risk under transparent and fair flower distribution system, utilizing the connection we have built with growers. Conditions for tender we suggest are following:

- The operator should have experience of working for distribution of perishables

Practices of distribution of perishable products are particularly different in terms of quality control from other distribution. (Even among food products, there is a big difference between the distribution of perishable food and the one of processed food).

- The operator should have knowledge of post-harvest management

Especially in handling flowers, the operator should have scientific and empirical knowledge about post-harvest management.

- The operator should be a neutral entity, not to be growers or not to be buyers

When the Collection Center will be operated by a producer or a buyer, even if the amount of shipment from the grower or the amount of purchase from the buyer is small, it will distort the pricing in favor of the grower or the buyer. In this case, transparent and fair pricing cannot be secured.

- The operator should have sufficient capital

The Da Lat Flower Collection Center is expected to have a cumulative loss for a while (for 5 years, we expect) after start of operation, because its running costs will exceed revenue. It cannot be run unless the operator can cover the loss offset by the operator's own capital.

2) Establishment of rules and regulations for operations at the Collection Center

Although Lam Dong Province and Da Lat City seem to understand the importance of transparent and fair pricing to some extent, but it is necessary to establish rules and regulation by a third party other than the operator in order to secure transparency.

Although we hope Lam Dong Province and Da Lat City to play the role, it seems that they don't realize it is their task. Among those administrators, majority seems to understand the project only as an investment policy, not as an agricultural development policy. Especially the department of agriculture and rural development expressed a skeptical opinion without any alternative proposals that they don't think the growers can understand the new way because it is different from the present way. And that can be an obstructive factor.

As a resolution, we will take the lead role to set up regulations and operation protocols, but in the same time we try to repeatedly promote further understanding toward importance of administrators' involvement.

3) Promotion of intention for establishment

It is another issue that the intention to establish the Collection Center is not enough broadly known among growers and buyers. In addition to the risk that we cannot get enough flowers from growers, it is more risky that growers might stop bringing flowers to the Collection Center after they notice that they cannot get expected profit, misunderstanding that they can easily get profit without making effort. In this point, we will explain that to growers on occasions that we can find at growers' seminar, workshop and so on in cooperation with DIDC.

4) Alliance with project partners

We have got agreement of cooperation with SATRA to work with the Bien Dien wholesale market. Besides, in order to establish more concrete commercial flow, logistic flow, information flow and monetary flow, it is necessary to make an alliance with the local system-engineering company who can establish the trading and accounting system.

And it needs an alliance with the transportation company for logistic flow who can accomplish the cold-chain delivery and an alliance with the financial company for the monetary flow who can be outsourced with the credit risks for buyers.

We have started negotiations with candidate alliance companies, and received positive replies to join our project. It hasn't reached the affirmative agreement, but we try to work out details of contents and conditions.

6.2.7. Risks upon business development and countermeasures

We discuss potential risks involved in business development by dividing into risks before and after establishment of the Collection Center

<Risks before establishment of the Collection Center>

1) Personal/human risk

When the person involved in decision-making in the project has been changed, there rises a concern that we have to explain from the beginning without handovers. In this case, the progress of the project could become stacked up and the content of decision-making could be changed. Mr. Viet, the chairman of the Lam Dong Province People's Committee and Mr. Hiep, the chairman of the Da Lat City People's Committee have been re-elected last year with their terms to 2020. Mr. Luyen, the director of DIDC will retire in January 2019. Although appointment of the next director will have to be approved by the Da Lat City People's Committee, Mr. Luyen will start discussions with the Da Lat City People's Committee for an early handover to the successor from the middle of this year.

2) Risk that another distribution system will be established

While we wait for an approval from the Vietnamese central government, the new “de facto standard” of distribution system could dominate the market.

3) Obstruction risk from middlemen

In the process of establishing a new flower supply-chain, some supply-chain partners in the present supply-chain might get disadvantages, and they could be an obstruction in the project.

Especially, the new supply-chain will take a job of middlemen away who are an intermediary relating between the production area and the consumption area both in the commercial flow and the logistic flow. In Dak Lak Province neighboring Lam Dong Province, which has the biggest coffee production in Vietnam, the new market distribution system was introduced as a trial to enable growers to trade with buyers not through middlemen, in order to adjust demand and supply, located in Tan An district of Dak Lak. The market called for shipment from the coffee growers in small and middle size, middlemen prevented growers from bringing their coffee beans to the market, because middlemen had concerns that they might lose their jobs. Eventually, the market failed to function and stop operations.

The reason the small- and middle-size coffee beans growers had to obey to middlemen's request is that small- and middle-size growers, who are lack of production resources and money, are standing at the weaker position because growers are borrowing money from middlemen. As we discussed in 6.2.3, we will consider co-working with middlemen and discuss with financial organization in order to change power balance between growers and middlemen.

<Risks after establishment of the Collection Center>

1) Risk to run the Collection Center sustainably (we, as the operator)

When we consider an incoming amount to the Collection Center,

a) if we receive much less amount than we expected, our operational risk will increase

b) if we receive much more amount than we expected, it could exceed the capacity

For (a), all we can do is to conduct proactive business operations (request of shipment to growers), and for (b), we have to consider a plan for the 2nd Da Lat Flower Collection Center. There is a land (next to the 1st Collection Center), but Lam Dong Province and Da Lat City don't indicate intention to invest their funds for construction and have an opinion that the operator must construct by herself. It will take long time to ensure enough fund to construct the 2nd Collection Center from accumulated profit reserve through operations. And if the speed of increase of incoming amount is higher than the accumulation of fund, we have to borrow fund from private banks and so on.

2) Risk to sell seeds and production resources

There can find many agents doing business for seeds and production resources in Da Lat, but their customers are usually large-scale flower growers; and small-scale growers can get only bad quality seeds and resources.

Therefore, the market of seeds and production resources for small-scale growers is potentially large, but we can only provide patent-free seeds or F1 varieties of first filial generation, because growers conduct illegal propagations without consciousness to intellectual property rights. Most of patent-free varieties are out of trend and we can find less demand on such varieties in Japan. The prices of F1 varieties are high and it is difficult for small-scale growers to purchase.

Lam Dong Province and Da Lat City often hold seminars to growers about intellectual proper rights. Although there is a domestic breeders' right law in Vietnam, it has not been into effect and police doesn't enforce regulations on illegal propagations. We should not expect improvement of police's enforcement but we try to broadly inform growers of disadvantages of illegal propagations (disadvantages such as they cannot be exported or they can be easily exposed to viruses), by making use of the opportunities of those seminars.

<Risk that we are not selected as the operator of the Collection Center>

We insist that the tender to select the operator of the Collection Center must be conducted in fair manners. Under the fair competition, we cannot prevent the risk that we are not selected as the operator.

Even if we are not selected, as long as the operations at the Collection Center are transparent and fair, we would like to expand our business utilizing the connections we have built with growers in the Da Lat flower production area by using the Collection Center.

6.3. Possibilities to connect with ODA projects

6.3.1. Necessity of connection

There already has been a business plan moving forward with a yen loan scheme among Lam Dong Province, Vietnamese Government and JICA.

Wholesale market in Japan is regarded as the basic social infrastructure responsible for perishable distribution to supply perishable products stably and efficiently to the public. The purpose of this project, which establishes a new supply chain connecting between the Da Lat Flower Collection Center and the consumer market, can be regarded as social infrastructure, as well as the wholesale market distribution system in Japan.

Because wholesale markets in Japan has secured transparent and fair pricing, growers can get an environment to concentrate on cultivation, and it promote competition among growers. Eventually, Japanese growers can produce world-class high quality agricultural products as a whole agricultural industry in Japan. Just in the same way, also in the flower industry in Viet Nam, providing a social infrastructure will help to further develop the industry together with growers' self-help efforts. The idea of self-help effort is consistent with the JICA's philosophy in development policy.

We do not expect a large profit from operating the Da Lat Flower Collection Center, because we recognize it as a social infrastructure. But as the biggest flower wholesale market, we have a big concern that the number of Japanese flower growers is diminishing and the downward trend can be accelerated. We have high hopes in Da Lat flower production area as it has a good environment for flower cultivation and can be anticipated to develop further among flower production areas in

the world. In that meaning, this project can demonstrate mutual dependency, which is another philosophy of development policy from JICA.

6.3.2. Details of the connected project

- (1) ODA yen loan to the Vietnamese government from JICA
- (2) Loan from the Vietnamese government to Lam Dong Province
- (3) Loan to the Da Lat flower Collection Center from Lam Dong Province

In order to secure transparent and fair pricing, we would like to request Lam Dong Province and Da Lat City to establish rules and regulations for operations at the Da Lat Flower Collection Center and to conduct periodical audit whether those rules and regulations are properly observed in daily operations.

End

6.4. Attachments

Attachment 1 No. 1 Annual training in Japan Training materials

Attachment 2 first 2 times in Japan training documents

Attachment 3 of seminar materials

FUNCTION OF WHOLESale MARKET



FUNCTION OF WHOLESale MARKET



CONCLUSION

Wholesale market plays social role and function to assure distribution

FUNCTION OF WHOLESale MARKET

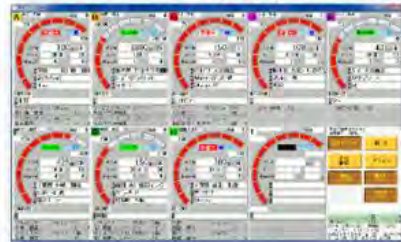


1. Fair & Transparent Pricing
2. Reliable Settlement
3. Stable & efficient Distribution

FUNCTION OF WHOLESale MARKET



1. Fair & Transparent Pricing
- Fairness
Demand and Supply decide the Price



FUNCTION OF WHOLESALE MARKET



1. Fair & Transparent Pricing

Transparency

Demand and Supply decide the Price

FUNCTION OF WHOLESALE MARKET



2. Reliable Settlement

Wholesale markets secure payment, taking credit risks of buyers.



Buyers can join auctions after credit examination by Tokyo Metropolitan Government.

FUNCTION OF WHOLESALE MARKET



2. Reliable Settlement

Wholesale markets secure payment, taking credit risks of buyers.



Buyers can join auctions after credit examination by Tokyo Metropolitan Government.

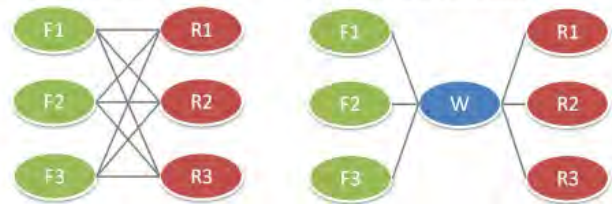
FUNCTION OF WHOLESALE MARKET



3. Stable & efficient Distribution

< No wholesale market intermediated >

< Wholesale market intermediated >



[F: Farmers, R: Retailers, W: Wholesale market]

No. of Action: $3 \times 3 = 9$ times

No. of Action: $3 + 3 = 6$ times

Market can reduce costs of overall society.

FUNCTION OF WHOLESALE MARKET



3. Stable & efficient Distribution

Features in production of perishables



- ① Easy to go rotten / deteriorated
- ② Production influenced by weather
- ③ Variable on seasons and region
- ④ Small growers scattered apart

➔ Each grower has weak bargaining Power and selling capability

FUNCTION OF WHOLESALE MARKET



3. Stable & efficient Distribution

Features in production of perishables

- ① Easy to go rotten / deteriorated
- ② Production influenced by weather
- ③ Variable on seasons and region
- ④ Small growers scattered apart

➔ Each grower has weak bargaining Power and selling capability

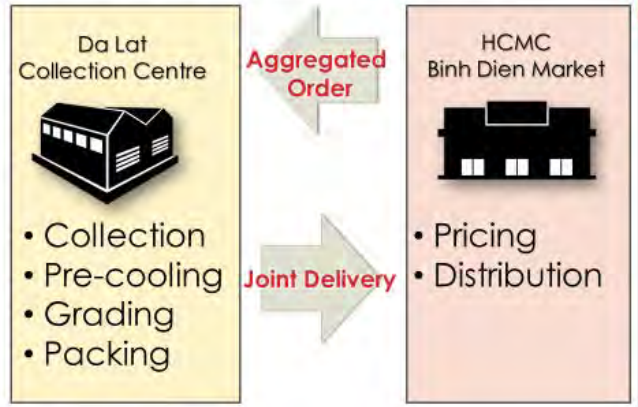
FUNCTION OF WHOLESALE MARKET



CONCLUSION

Wholesale market plays social role and function to assure distribution

FUNCTION OF WHOLESALE MARKET



Japanese Flower Industry and Quality

2016/04/20

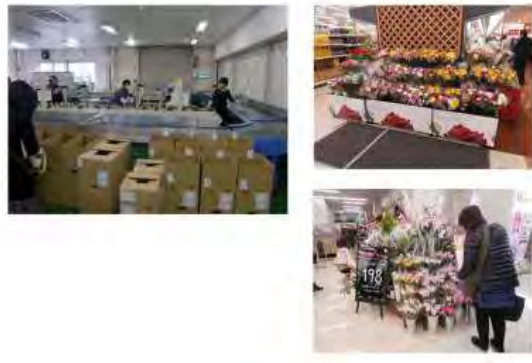
The flow from grower to consumers



Demand for personal gift and home use Flower shop



Demand for home-use (for supermarket bouquet maker)



Demand for home-use Home-Center



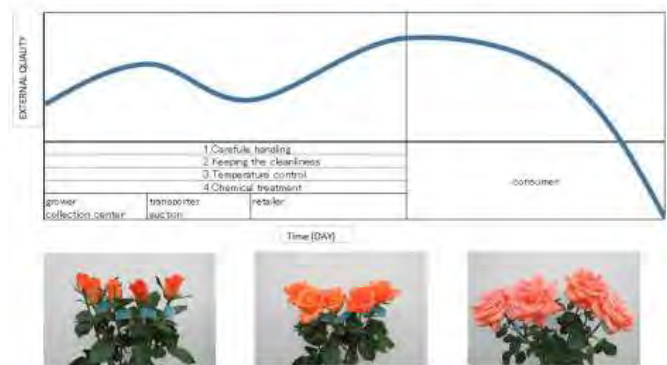
Demand for ceremony



Decision of trade

- External quality: judge to look at eyes
 - size of flower
 - stem length
 - free from damage caused by insects and diseases.
 - free from physical damage.
 - etc...
- Internal Quality :Invisible ,It is necessary to note.
 - pre-treatment, vase-life
- Slight variability per bunch per box

Pattern of external quality and time



How to keep Quality?

- 1.Careful handling
- 2.Keeping the cleanliness
- 3.Temperature control
- 4.Chemical treatment

1.Careful handling



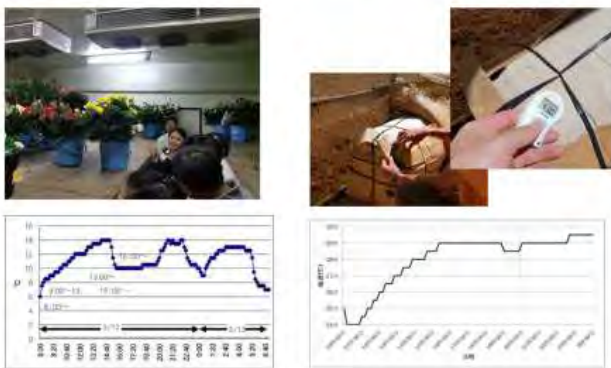
1. Careful handling



2. Keeping the cleanliness



3. Temperature control



4. Chemical treatment



Thank you for your hearing.



OTA FLORICULTURE AUCTION CO., LTD.



OTA FLORICULTURE AUCTION CO., LTD.



Công ty TNHH Ota Floriculture Auction bắt đầu hoạt động với hệ thống đồng hồ đấu giá từ năm 1990



OTA FLORICULTURE AUCTION CO., LTD.

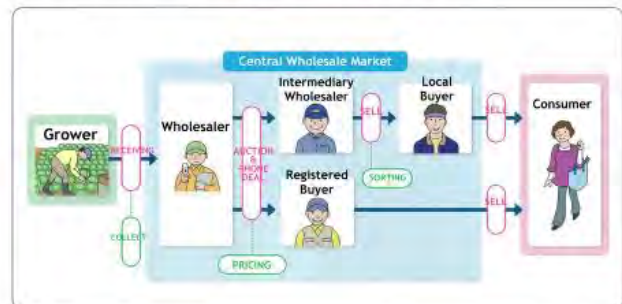


- Chợ đấu giá trung tâm
 - Được cấp phép bởi chính phủ.
 - Đặt dưới sự kiểm soát của Tokyo Metro. govt.
- Lớn nhất trong gần 120 chợ đấu giá hoa ở Nhật Bản.
- Năm 2015 đã bán 416 triệu chậu & cành hoa với doanh thu 26,5 tỷ yên (5,4 nghìn tỷ VND).
- Với sự tham gia của 4500 người trồng hoa và 500 người mua thường xuyên.

OTA FLORICULTURE AUCTION CO., LTD.



Structure of Wholesale Market Distribution of flowers in Japan



FUNCTION OF WHOLESALE MARKET

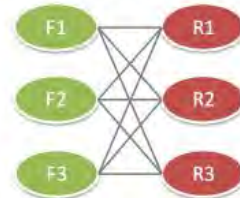


FUNCTION OF WHOLESALE MARKET



1) Reduction in distribution costs:

< No wholesale market intermediated >



< Wholesale market intermediated >



[F: Farmers, R: Retailers, W: Wholesale market]

No. of Action: $3 \times 3 = 9$ times

No. of Action: $3 + 3 = 6$ times

Market can reduce costs of overall society.

FUNCTION OF WHOLESALE MARKET



2) Channel for stable supply:

Features in production of perishables

- ① Easy to go rotten / deteriorated
- ② Production influenced by weather
- ③ Variable on seasons and region
- ④ Small growers scattered apart

➔ Each grower has weak bargaining Power and selling capability

FUNCTION OF WHOLESALE MARKET



3) Reliable settlement:

Wholesale market secures payment for growers, taking credit risks of buyers.



Credit risk of Buyers are carefully examined when Wholesale market makes contracts with Buyers.

FUNCTION OF WHOLESALE MARKET



4) Fair price:



Prices are decided at matching point between demand and supply under free competition.

FUNCTION OF WHOLESALE MARKET

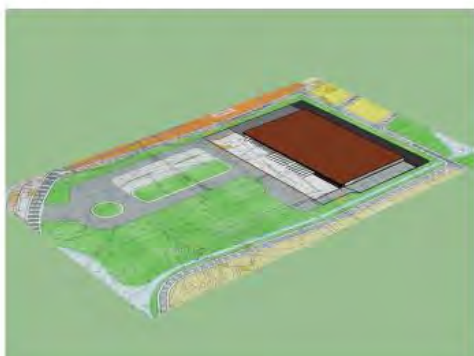


5) Transparent price:

Auction prices are informed both to buyers and growers on a real-time basis.



PURPOSE OF DALAT FLOWER COLLECTION CENTER



PURPOSE OF DALAT FLOWER COLLECTION CENTER



PURPOSE

To achieve

- 1) Fair & Transparent Pricing
- 2) Good Post-harvest Management

MỤC ĐÍCH CỦA TRUNG TÂM GIAO DỊCH HOA ĐÀ LẠT



MỤC ĐÍCH

Nhằm đạt được

- 1) Giá cả công bằng và minh bạch
- 2) Quản lý sau thu hoạch tốt

PURPOSE OF DALAT FLOWER COLLECTION CENTER



What is the most important for Fair & Transparent Pricing?

Standardization & Grading



Buyers can buy target quality & length, based on grading info with trust

PURPOSE OF DALAT FLOWER COLLECTION CENTER



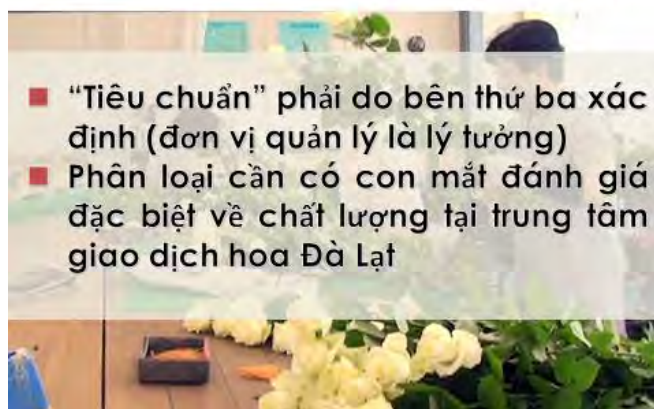
- "Standards" must be decided by the third party (ideally by administrative)
- Grading needs special judge eyes on quality at Da Lat FCC.



MỤC ĐÍCH CỦA TRUNG TÂM GIAO DỊCH HOA ĐÀ LẠT



- "Tiêu chuẩn" phải do bên thứ ba xác định (đơn vị quản lý là lý tưởng)
- Phân loại cần có con mắt đánh giá đặc biệt về chất lượng tại trung tâm giao dịch hoa Đà Lạt



MỤC ĐÍCH CỦA TRUNG TÂM GIAO DỊCH HOA ĐÀ LẠT



Functions Allocation between LD & HCMC



Trình bày tại Hội thảo về Trung tâm Giao dịch Hoa Đà Lạt

Tháng 1, 2017



Chúng tôi là ai



(Video 02:33)

Chúng tôi là ai?



Chúng tôi là

- Đơn vị vận hành Chợ đấu giá hoa OTA ở Tokyo, Nhật Bản
- Đơn vị lớn nhất trong số 122 chợ đấu giá hoa ở Nhật, lớn thứ 3 thế giới
- Tiếp nhận, giao dịch 416 cành hoa và 8 triệu chậu hoa mỗi năm
- Tiếp nhận từ 4.000 người trồng và giao dịch với 600 đơn vị mua có giấy phép
- Đã tham gia vào dự án Trung tâm Giao dịch Hoa Đà Lạt từ năm 2010

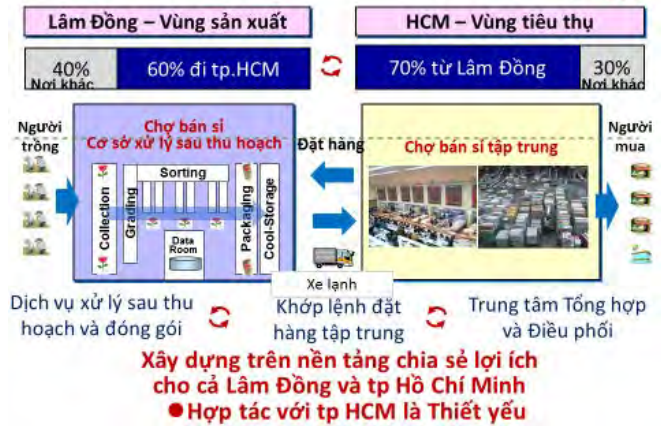
Chúng tôi sẽ làm gì?



Chúng tôi sẽ làm gì



Chúng tôi sẽ làm gì

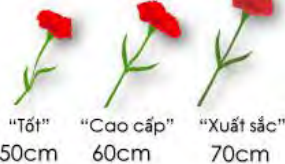


Tại sao chúng tôi làm vậy?



Tiêu chuẩn & Phân loại

Người mua có thể mua sản phẩm có chất lượng và độ dài mục tiêu, dựa trên thông tin phân loại có uy tín



Giá cả hợp lý, Giá cả minh bạch

Thông tin giá cả sẽ nhanh chóng được thông báo cho người trồng và thanh toán sẽ được đảm bảo

Tại sao chúng tôi làm vậy?



Quản lý sau thu hoạch tốt

Khách hàng muốn hoa cắt cành tươi lâu



Duy trì chất lượng = Duy trì giá trị

Trung tâm Giao dịch Hoa sẽ làm tốt nhất công tác quản lý sau thu hoạch dựa trên ý tưởng quy trình lạnh

Tại sao chúng tôi làm vậy?



Giảm chi phí phân phối

Không có chợ bán sỉ làm trung gian

< Có chợ bán sỉ >



Số lần giao dịch: 3 x 3 = 9 tác động

Số lần giao dịch: 3 + 3 = 6 lần

Trung tâm Giao dịch Hoa Đà Lạt sẽ giảm chi phí hậu cần và chi phí vận chuyển

Yêu cầu cho Người trồng



Xin hãy đưa Hoa của Quý vị đến TT Giao dịch Hoa

Nhưng vui lòng đừng hiểu rằng khi làm vậy, quý vị sẽ nhanh chóng bán được hoa với giá cao hơn

Xin hiểu rằng nỗ lực của quý vị để có được chất lượng cao hơn sẽ được đền đáp bởi hệ thống giá cả công bằng & minh bạch, quy trình quản lý sau thu hoạch tốt, quản lý chi phí hiệu quả bởi TT giao dịch Hoa Đà Lạt

Yêu cầu cho Người mua



Xin hãy cùng tham gia vào TT Giao dịch Hoa

Cùng với dự án của chợ Bình Điền – một chợ hoa mới có trang bị kho lạnh

Quý vị có thể mua hoa đúng theo yêu cầu, mục tiêu về chất lượng đặt trong điều kiện chuẩn thông qua quy trình lạnh

Sẽ không còn những thùng hàng “hên xui” có nhiều loại chất lượng khác nhau, có ho bị hư hỏng nặng do chèn ép



Quản lý chất lượng hoa cắt cành

Viện nghiên cứu hoa OTA
Giám đốc Susumu Kiryu

Giới thiệu



Quản lý chất lượng



Quý vị có nhận ra sự khác biệt giữa A và B?



Ngày 1



Có xử lý



Không xử lý

Q: Quý vị thích hoa nào?



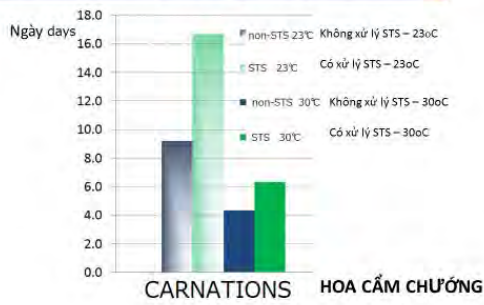
Sau vài ngày



Không xử lý

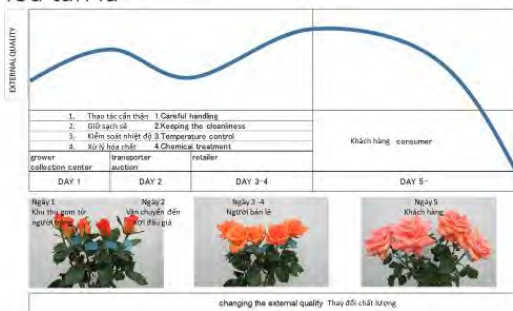
Có xử lý

Độ tươi của hoa cẩm chướng thử nghiệm trong mùa hè



1) Thông tin chung về độ tươi của hoa

Hoa tàn là ...

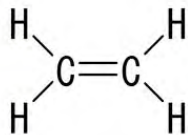


Điều gì khiến hoa héo úa nhanh

- ① Hormone gây héo úa
- ② Vi khuẩn và nấm
- ③ Điều kiện môi trường và quá trình hút nước
- ④ Thiếu năng lượng
- ⑤ Tác động gây hại vật lý

① Hormone gây héo úa

STs là gì



Silver Thiosulfate
Bạc 3 sulfate

Ethylene từ đâu ra?

- Từ trái cây
- Khói xe
- Khói thuốc lá



Danh sách các nhóm nhạy cảm với Ethylene

Mức độ nhạy cảm	Loại
Cao	Cẩm chướng, Bibi, Hoa phi Yến, Lan đầu thơm
Cao vừa	Cát tường, Môm sói, Hoa hồng, Hoa li peru
Thấp vừa	Tứ la lan (hồng xiêm), Lily màu (không thơm), Thủy tiên
Thấp	Hoa cúc, Đồng tiền, Lay-ơn (hoa đơn), Lí ứ

②Vi khuẩn và nấm

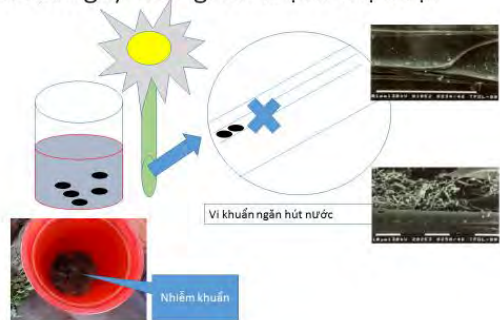
Thực vật cũng có thể nhiễm bệnh

Vi khuẩn và nấm sẽ xâm nhập vào hoa từ những phần hoa yếu hoặc từ những vết xước

Độ tươi của hoa sẽ cực kỳ ngắn nếu bị vi khuẩn và nấm xâm nhập



Vi khuẩn gây tắc nghẽn mạch thực vật



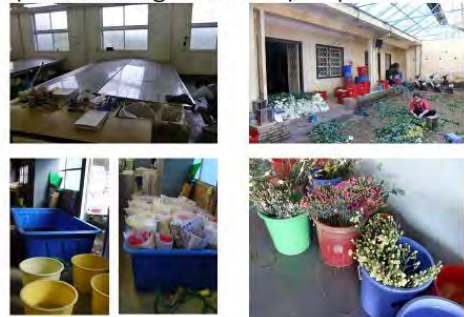
Nấm gây bệnh



Bệnh: Mốc xám
 Nguyên nhân: Botrytis
 Nhiệt độ ưa thích: 15-24°C
 Lây lan tất cả các loại hoa
 Dọn sạch nơi làm việc.



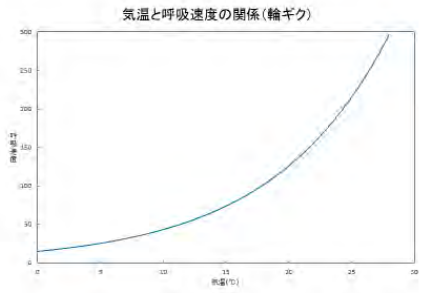
Giữ sạch sẽ để ngăn nấm bệnh phát triển



③ Điều kiện môi trường và quá trình hút nước

Điều gì khiến hoa héo?

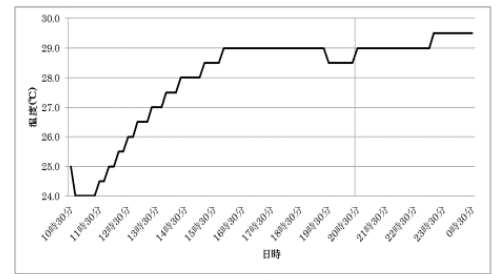
Các yếu tố bao gồm nhiệt độ cao, gió trực tiếp và ánh sáng mạnh trong thời gian dài



Kiểm soát nhiệt độ



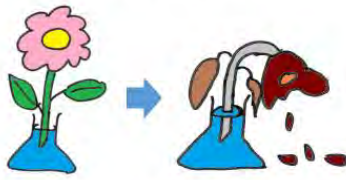
Kiểm soát nhiệt độ thấp



④ Thiếu năng lượng



Cần năng lượng



⑤ Tác động gây hại vật lý



2) Làm gì để giữ chất lượng tốt

Người trồng hoa

Người phân phối và vận chuyển

Người bán lẻ

Người trồng



Thu hoạch





Tổng quan thông tin cho người trồng

Điều kiện	Nội dung
Nhà kính	Giữ sạch sẽ
Thu hoạch	Vào buổi sáng hoặc buổi tối khi trời mát Đặt hoa vào xô nước trong 30 phút
Nước	Có chất xử lý phù hợp Dùng xô sạch Dùng nước máy, không phải nước có xử lý
Nơi làm việc	Giữ sạch sẽ Nhiệt độ mát, dưới 25oC
Kéo	Giữ sạch sẽ
Máy làm lạnh	Dưới 10oC
Thời gian làm lạnh	Hơn 3h

Người phân phối và Bán sỉ



Người phân phối và Bán sỉ



Tổng quan thông tin cho người phân phối

Đối tượng	Nội dung
Cửa hàng	Giữ sạch sẽ
	Giữ nhiệt độ mát từ 10 -25oC
	Thao tác cẩn thận
Kho lạnh	5-10oC
Giữ nước/ hút nước	Có xử lý phù hợp

Người vận chuyển



Tổng quan thông tin cho Người vận chuyển

Đối tượng	Nội dung
Yếu tố cơ bản	Giữ sạch sẽ và gọn gàng
	Nhiệt độ mát từ 10-25oC
	Thao tác cẩn thận
	Tắt máy xe
Xe tải	Nhiệt độ thùng lạnh được khuyến khích 5-10oC
	Đo nhiệt độ thường xuyên

Người bán lẻ



Tổng quan thông tin cho người bán lẻ

Đối tượng	Nội dung
Cửa hàng	Giữ sạch sẽ và gọn gàng
	Kiểm soát nhiệt độ
	Không có gió thổi trực tiếp vào hoa
Hút nước	Ngâm nước ngay lập tức
	Dùng thuốc cho hoa có chất chống khuẩn và đường
	Cắt bỏ lá thừa
Bình và xô	Rửa sạch sẽ
Điều kiện kho lạnh	Không cao hơn 15oC

Cảm ơn sự quan tâm theo dõi của Quý vị.

