Case Study

Regional Horticulture Promotion Project

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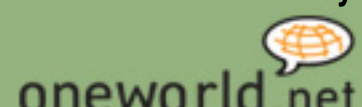

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EXECUTIVE SUMMARY

The Regional Horticulture Promotion Project in historically agrarian Kalimpong is transforming agriculture from an activity that barely ensured sustenance to a potentially profitable one and encouraging the return of many local residents to their farming roots.

Lack of systematic farming methods, the role played by middle men and encroachment of products from nearby cities has detrimentally affected the farmers of Kalimpong and their earnings. To address this issue, Dr. Graham's Homes School in association with Miyazaki International Volunteer Centre (MIVC) a Japanese NGO, with support from the Japan International Cooperation Agency (JICA) started the Regional Horticulture Promotion Project (RHPP) in 2009.

The RHPP aims to enhance the livelihood options of small farmers by conducting training sessions on advanced agro-horticultural techniques and enabling farmers to grow new high-yielding varieties of crops. Through the Horticulture Training Centre (HTC) built at Dr. Graham's Homes, farmers from about 20 villages of the Darjeeling District are given holistic training and knowledge about farming. Initially farmers are made familiar with their local farming culture and environment and are encouraged to use the best techniques suitable to their surroundings. After such contextualized knowledge, farmers are trained in specific farming methods like soil cooking, germination, pest management, tissue culture etc. Which is followed by training in food processing techniques.

Along with the theoretical training, practical classes are held at the green houses at Dr. Graham's Homes where the trainee farmers cultivate many new varieties of flowers, rice and vegetables -Japanese rice, Chinese cabbage (Hakusai), Broccoli, Statice, Sweet Pea, Globe Amaranth. Once they do so successfully, they are then encouraged to follow suit on their own land and are also trained to develop their infrastructure by building low-cost green houses made of bamboo and vinyl sheets. The training thus is a complete package.

These new techniques, crops and green house cultivation support off- season production and have increased the income of the farmers. They have made the farmer self sufficient and in tune with latest technological developments. The farmers now produce surplus yield, which they can sell in the market via the "Realistic Store" built in the project premises. This eliminates the middle men who earlier would buy the farmer's produce at very low prices and sell them in the market at a large profit deriving the farmer of his/her share of profits.

The reach of the project is continuously increasing and in one year it has successfully trained around 120 farmers in the training centre who then go back and train their friends and relatives.

A process has been put in place to establish a farmer's co-operative with a self-help marketing system for mass production. This will be a community exercise and help the local farmer populace to regain control over their economic lives.

This document captures the objective, working design, achievements and impact of the project with the purpose of assisting in the replication of such an initiative elsewhere and transforming the lives of agriculturists.

BACKGROUND

Kalimpong: An Agricultural Area

Kalimpong is a hill station in the Himalayan range in North- West Bengal, India. It is primarily an agricultural area with temperate climate, rich in flora and fauna. More than 80% of its local residents are farmers. However, even though the climate favours good agriculture, the lack of systematic farming techniques and access to proper markets makes it difficult for farmers to reap maximum benefits from their hard work and labour. As a result they are able to produce only as much is enough for their sustenance thereby failing to make use of the full potential of the fertile region.

Since most of these farmers are small scale farmers and lack an educational background, a middle layer of intermediaries have built a system of market dealings which adversely affect the farmer's profits. When the farmers produce surplus amounts of crops (in access of what is needed for sustenance) these intermediaries' i.e. local vendors buy crops from them at a very low price and sell it them at higher costs. Though, earlier these farmers were able to sell their small produce in markets within Kalimpong, but due to enhanced connectivity with nearby cities of Siliguri and Sikkim, now the markets of Kalimpong are filled with produce from these cities.

Under these circumstances, Dr. Graham's homes School in Kalimpong in association with Miyazaki International Volunteer Centre (MIVC) a Japanese NGO with support from the Japan International Cooperation Agency (JICA) started the Regional Horticulture Promotion Project(RHPP) in 2009.

Regional Horticulture Promotion Project (RHPP)

As a part of the project, a training programme that promotes innovative agricultural practices to improve yields, output quality, as well as market reach is conducted for the farmers. RHPP caters to farmers in over 20 villages. The roots of RHPP can be traced back to 1997, when two green houses were built by the Japanese Committee of Dr. Graham's home. These green houses were meant to facilitate the cultivation of flowers and become centres for practicing floriculture. Since then there has been no looking back. These green houses and the practice of

floriculture became a hit with the local farmers and they came forward to learn new ways of growing vegetables, fruits and flowers.

This green house project formed the basis for the Horticulture Technology Centre (HTC) at Dr. Graham's Homes which was built with support from the India Green House Community Service Project supported by JICA from 2005 to 2008. During these three years farmers from Santook, Paiyong, Dungra, Pudung and Manchu villages in Kalimpong who showed keen interest were trained and guided in employing systematic methods in farming and taught advanced shipping, food-processing and flower arrangement techniques. They were also encouraged to try the use of new crop and flower varieties that would subsequently better their living conditions and enhance their income. The RHPP was a logical extension of the green house and community service projects.

OBJECTIVE

The Regional Horticulture Promotion Project aims:

- To train local farmers in the use of advanced methods for agro-horticulture and increase their productivity.
- To assist in the growth of such agro-horticultural products.
- To establish a self-help marketing system for the farmers.
- To use the above to enhance the livelihood options of small farmers in general and women in specific and make them self-sufficient.

WORKING DESIGN

The RHPP is an extension of the India Green House Community Service Project (2005-2008). The HTC constructed during this time consisted of a laboratory, germination room, chemical room, food processing room, lecture/meeting room, grading /sorting room and storage room. Here research was conducted for the development of new and advanced farming techniques. With the help of the HTC, farmers, trainees and students were imparted agricultural knowledge and best cultivation techniques through organized workshops and seminars. The focus was on technology transfer.

Under RHPP, the HTC was expanded to house a Tissue Culture laboratory and many modern farm equipments like power tiller, rice milling machine etc. were also procured. RHPP differs from the earlier project because it institutionalizes the training procedure imparted to the farmers. This process of institutionalization was conceptualized because of the immensely favourable response that the earlier projects received.

FIGURE 1: RHPP TRAINEES DURING A TRAINING SESSION

Within RHPP three types of special horticultural training programmes are being conducted:

- Long term for a duration of one year
- Mid-Term for a duration of six months
- Short Term for a duration of one month

The selection process of trainees is carefully planned. Several field visits are held to determine the people who need the training the most. A minimum level of education is required (up till class 8) and the farmer must show deep interest and commitment in farming.

Training Content

With a committed and trained team of staff members from India (some of whom were trained in Japan) and Japan, and other guest experts including lecturers from the Uttar Banga Krishi Vishwa Vidyalaya (UBKV) the training programme imparts contextualised knowledge to the farmers on what farming techniques and crops are most suitable to their local environment. They are then trained in various agro-horticulture techniques including soil cooking, germination, and disease and pest management, tissue culture followed by food processing methods. Farmers are also given computer training for maintaining accounts and keeping a record of the numbers.

Practical Lessons

Along with theoretical training, the farmers are practically trained in the green houses. They cultivate many new varieties of flowers, rice and vegetables like Japanese rice, Chinese cabbage (Hakusai), Broccoli, Statice, Sweet Pea, and Globe Amaranth in the green house and are involved in the process from sowing till harvesting. Once they successfully do so they are then encouraged to cultivate and grow these new varieties of crops on their land.

FIGURE 2: CHINESE CABBAGE, GLOBE AMARANTH, STATICE

Farmers are taught to build low-cost green houses on their land with locally available bamboo and vinyl sheets. These green houses support off season production and with this the farmers can start farming on their land with a completely new approach.

Selling their Produce

The purpose of RHPP does not end with training and cultivation. Their fields are frequently visited by the RHPP staff to examine if they are following the processes and techniques correctly and to give them further guidance wherever necessary. Farmers are then encouraged to sell their produce at the best possible rates. For this purpose a shop called the 'Realistic Store' has been opened on the project premises i.e. Dr. Graham's Homes. Here the farmers can sell their products and eliminate the intermediaries who were earlier biting into their profits.

FIGURE 3: A GREEN HOUSE MADE OF LOCALLY AVAILABLE BAMBOO AND VINYL SHEETS.

METHODOLOGY

The Regional Horticulture Promotion Project (RHPP) was identified as a best practice by the OneWorld research team on the basis of its unique approach towards transforming farmer's lives. It was seen an economically viable and socially sustainable initiative, highly suitable for replication.

The team visited Kalimpong to develop a better understanding of the initiative. Semi structured interviews were conducted with the various stakeholders and trips to the green houses and the HTC were organized. The researchers interacted with the farmers and visited their fields. They also witnessed the inauguration of a new training session and were present at the convocation of the outgoing trainees. All these experiences and interactions helped shape the teams understanding of the project and gave them a holistic picture which proved to be highly advantageous in the preparation of this document.

KEY STAKEHOLDERS

- **Dr Graham's Homes School:** A century old institution Dr. Graham's Homes does not confine itself to educating children and has actively been involved in vocational training

to created enhanced livelihood options. Its premises house the HTC and the green houses under the RHPP project.

- **Miyazaki International Volunteer Centre (MIVC):** RHPP was the brainchild of MIVC Japanese NGO which has been sponsoring children at Dr. Graham's Homes for the past twenty years. MIVC plans and devices the training modules and oversees the overall functioning of the project.
- **Japan International Cooperation Agency (JICA):** The financial support for the project comes from JICA- a Japanese donor agency which funds several development programmes across the country. JICA also assists farmers in procuring high-value seeds at low-cost.
- **Uttar Banga Krishi Vishwa Vidyalaya (UBKV):** Experts from UBKV impart the specialized training to the farmers and guide them to adapt these techniques to the local environment.
- **Farmers in Kalimpong:** Ultimately, the project hopes to make the farmers of Kalimpong self-sufficient by acquainting them with modern practices in farming.

LESSONS LEARNED

Farming benefits

Advanced technology: New methods introduced under RHPP like the soil cooking, germination, pest management etc. have influenced the local farming methods and helped farmers adapt these techniques to their fields and increase productivity.

High-value crops: For many farmers RHPP has added not only variety in their approach and technology but also in the variety on their farms. Most of these new varieties

Sl.No.	CROPS	RATE
1.	Sweet-Peas	4/stick
2.	Cymbidium	35/stick
3.	Globe Amaranth	2/stick
4.	Statice	10/stick
5.	Eustoma	40/stick
6.	Delphinium	50/stick
7.	Peacock Flower	10/stick
8.	Ranunculus	20/stick
9.	Carnation	20/stick
10.	Phalaeonopsis	35/stick
11.	Chinchirinchee	2/stick
12.	Fressia	1/stick
13.	Broccoli	60/Kg
14.	Capsicum	80/Kg
15.	Tomato	40/Kg
16.	Asparagus	First Time
17.	Strawberry	200/Kg
18.	Sweet Potato	50/Kg
19.	Hakusai	30/Kg
20.	Mushroom	100/Kg

TABLE 1: High value crops

of crops are high value.

Off-Season Production, Increased Yields and Income : With the help of the green houses constructed under the project, farmers can sow these crops during off-season periods too, this ensures increasing yields and a year round source of income. This way the farmers are able to meet not just their basic sustenance needs but also sell their surplus produce in the market.

"Usually only 60% - 70% of the seeds used to germinate, but after following the soil cooking and germination process, almost all of the seeds we sowed germinated. Last year we had to buy ball chillies from the market for our domestic consumption, but this year it is the other way around – we had a surplus produce that we managed to sell in the market after keeping aside a small quantity for our own use. Looking at the growth in my field, other villagers have also started following these methods" says Ms. Doelma Sherpa, a young farmer from East Payong Basti and a graduate of the short term training programme.

FIGURE 4: TRAINEES LEARNING TO COOK SOIL

Removing Intermediaries- Introducing Self sufficiency

The training is very thorough and designed in such a way that once it is completed the farmer is fully prepared to use this knowledge to its best.

With RHPP and the 'Realistic Store', the farmers now do not have to go through intermediaries (middle men) to sell their produce in the market. The training helps them to rightly price their produce and with the help of the store they are able to place their produce in the market and reap benefits.

Enhanced livelihood options

FIGURE 5: FRESH VEGETABLES FOR SALE AT THE TRAINEES REALISTIC SHOP

RHPP is training the locals in various innovative horticultural techniques. Techniques of flower arrangement, crop processing etc are opening new livelihood options for the locals. Some farmers who were trained have also opened nurseries where they sell saplings to other farmers in the area. Many women from the area have learnt the art of flower arrangement and use this skill to generate additional income. With an increased income the

local population can afford to educate their children and brighten their possibilities for the future.

"Arun Chettri, a driver by profession was well aware of the popularity of flower cultivation around Kalimpong. When he heard about the training programme, he saw it as a welcome opportunity to try his hand at something new and improve his economic prospects. From then on, it has been a story of success; he learnt the techniques and processes of floriculture, practiced it on his sister's land and now has a nursery of his own from where other villagers buy their saplings. RHPP has helped him come a long way."

Increasing reach of the Project

Within a period of one year, the RHPP has trained 11, 16 and 89 rural people through its long term, mid-term and short term courses. The training has attracted not only farmers' but also people from other walks of life like teachers, students and ex-service men. Further trained villagers, pass on the training to their friends and relatives and encourage them to adapt new agro-horticultural techniques. These techniques are also replicated from one village to another village.

Looking Ahead

Convincing farmers of the advantages of the new techniques, a process has now been put in place to establish a farmers co-operative (see diagram below) with a self-help marketing system for mass production. Many meetings have been held in this regard and co-operative leaders have been selected. The co-operative staff and participant farmers are being trained.

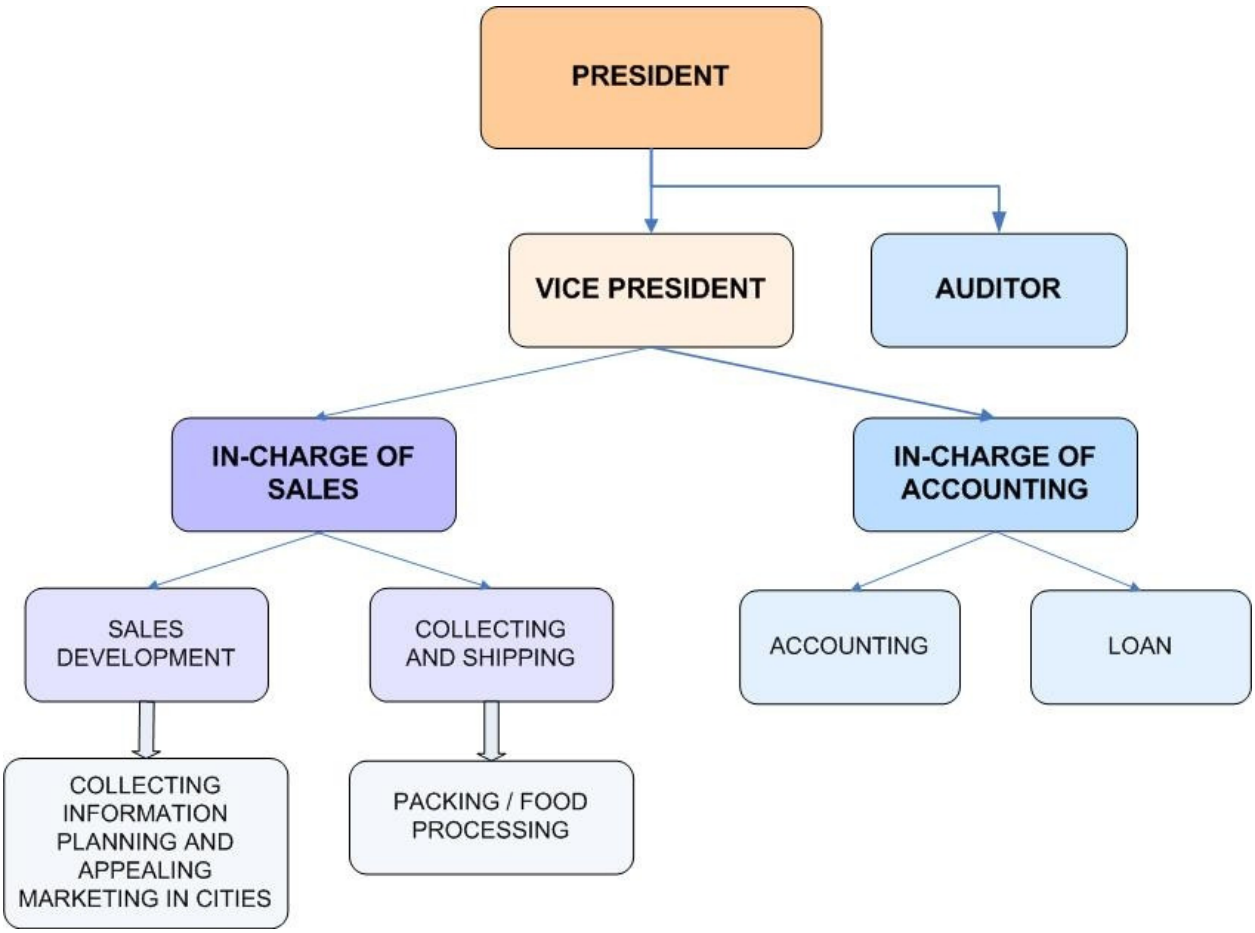

FIGURE 6: Farmer's Co-operative Matrix Design

RHPP will be in operation till 2012, till then local capacities for training and marketing will be established. RHPP and the green house and community service projects have altered local farming methods and market dynamics creating a 'new beginning' for the farmers of Kalimpong and placing them on the track of self-sufficiency .

Sushma Sherpa, a 35 year old farmer from Upper Samalbong, wears an expectant look as she attends the first session of the year-long agro-horticulture training programme at Dr. Graham's Homes in Kalimpong. With a long family history of farming and agriculture as her only source of income, she is particularly motivated to be here, "I am here to learn about new techniques, which I am told will help increase the productivity of my land."

REFERENCES

- Report & History OF Greenhouse & JICA Project prepared by MIVC
- JICA briefing on the project

ANNEXURE I: INTERVIEW QUESTIONNAIRE

Project Staff	Why the training – what were the key issues / need About the training in Japan What were the components of the trainings How did it help here in Kalimpong / how critical was it (the need)
To understand the need, method, challenges, pull factor, results, learning.	What were the initial reactions of the people – to attend training and also to accept change in their method of agriculture/horticulture Did they attend the trainings with interest – what was the driving factor(why did they attend) Which section of the community showed more interest What were the benefits for the people About the food processing unit – how did it attract women – what are the products – market – how is helpful Finding market – demand-supply chain how was it built (especially in case of exotic Sweet Peas as cut flowers for the first time in these hills and first time in India.) How did the market accept the new products Need for 2 glass houses and 14 locally made polythene houses How do people use the infrastructure facility at DR.GGH What worked and what didn't work – learning Challenges and surprises
Farmers/youth – 3/village [who attended the training]	What was your primary livelihood before What are you doing now – what has changed

To understand the impact – in terms of livelihood, how they have used the training, understanding market. Impact at family and social level, future plans	How many days you attended the training – what training – how did you employ the skills in real life – how easy/difficult was it About the support by GH team What made you to change / adopt (the driving factor) What were the reactions in your family If there is an increased productivity/income – what did you do with the extra income – spent for what Did anyone else got inspired because of you What do your friends and others in village say? How do they perceive you What used to be the market demand before – how did the market accept the new products Were you aware that market demanded such products before also? If yes – why didn't you didn't produce/plan Future plans – what are you planning to grow and your targets
Women [1-2 /village]	What do you do About your family - members, occupation What did you used to do before Did you participate in training Why did you choose food processing – what pulled you What do you do with the earned money now what's the difference- after you have become the earning member in family what's your contribution and responsibility now Coming together and out – the feeling What are the changes in the village – in terms of perceiving women now What is your future plan –
To understand their contribution in the family before and after also what are the ways in which they are motivated/empowered	
Market	Were their need for these (get the list) products How is the quality Does the customer recognise the change in product from different

	suppliers – (quality) What about the price Is there a middle person Who are your other suppliers – why do you support these people