

# *Scaling Up On Foundations Built*

## **Review of VVCP Programme and Strategic Planning for Next Phase**



**Strategy Study Commissioned By**



**Study Conducted By**

STADD Development Consulting Private Limited, New Delhi  
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## Acknowledgements

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## Project Snapshot

No. of Dzongkhags covered within VVCP-E Programme	6 – Mongar, Lhuentse, Pemagatshel, Samdrup Jongkhar, Trashigang, Trashigang
Total Population/Households in project area	178,300/36,300
Defined goal achievement by 2014: Number of households to raise income 5-15%	Original Target: 1,500 Scaled Up Target: 2,500
Number of groups formed as part of project	114
Total groups to be covered under VVCP-E	140
Vegetable produced (MT/pa)	2012: Produced 592.9 MT and sold 355.74 MT 2013 (Jan - Oct): Produced-745.29 MT and sold-447.18 MT
Combined turnover of VVCP groups (Nu./pa)	5.13 million
Number of OSFS in region	13
Number of OSFS planned	25
Average investment in an OSFS	Nu. 1.34 mn.
Average annual turnover of an OSFS	Nu. 0.40 mn.
Schools/institutions covered in feeding prog.	31
Groups collaborated with schools	57
Vegetables supplied to schools (MT/pa)	163
Turnover of group-school supply (Nu./pa)	2.93 million
Total number of schools in East	106 (59 boarding & 47 day schools)
Total requirement of vegetables (MT/pa)	1,499 MT
Total value of vegetables (Nu./pa)	23.53 mn.
VVCP-E Budgetary Outlay	Nu. 10 mn.
Duration of VVCP-E Programme	April, 2011 to April, 2015
Financial Supporters of VVCP-E Programme	RGoB, MAGIP, and SNV
Project Execution Agency	Regional Agriculture Marketing and Cooperative Office (RAMCO), Mongar (a regional office of Department of Agricultural Marketing and Cooperatives under the Ministry of Agriculture and Forests, RGoB)
Staff complement of RAMCO	9
Technical Support Agency	SNV, Bhutan

## Terms Used

### Currency

Local Currency = Bhutanese Ngultrum (Nu.)

1 Indian Rupee = 1 BT Nu.

1 US Dollar = 62.5 Nu

(as on Dec 4<sup>th</sup>, 2013)

### Weights & Measures

1 kilogram (kg) = 2.206 pound (lb)

1 quintal (qtl.) = 100 kgs.

1 kilometre (km) = 0.62 mile

1 square metre (m<sup>2</sup>) = 10.76 square feet

1 acre (ac) = 0.405 hectare (ha)

1 hectare (ha) = 2.47 acre

1 acre = 100 decimal

### Bhutanese Terms

Dzongkhag = Regional administrative unit

Geog = Sub-regional admn. unit

Shedra = Buddhist centre of learning

Tsheri = Shifting cultivation

Pangshing = Dryland

Chhuzhing = Wetland

Tsamdrok = Grazing land

Khamzhing = Dryland

## Abbreviations & Acronyms

AMEPP	Agriculture, Marketing & Enterprise Promotion Programme
ASAMB	Assam State Agricultural Marketing Board (India)
BTN	Bhutan Ngultrum
CFM	Centenary Farmers Market (Thimpu)
FCB	Food Corporation of Bhutan
FF	Farmer Friend
FG	Farmer Group
GDP	Gross Domestic Product
Ha.	Hectare
HH	Household
HRDP	Horticulture Research and Development Project
IFAD	International Fund for Agriculture Development
IFPRI	International Food Policy Research Institute
INR	Indian Rupee
JICA	Japan International Cooperation Agency
JLG	Joint Liability Group
Kg.	Kilogram
Km.	Kilometre
MAGIP	Market Access and Growth Intensification Project
Mn.	Million
MoAF	Ministry of Agriculture and Forestry

MoE	Ministry of Education
MoH	Ministry of Health
MT	Metric Ton
NABARD	National Bank for Agriculture & Rural Development (India)
Nu.	Ngultrum
OVP	Off-season Vegetable Programme
OSFS	One Stop Farmers Shop
Qtl.	Quintal
RAMCO	Regional Agricultural Marketing and Cooperative Office
RGoB	Royal Government of Bhutan
RML	Reuters Market Light
RNR-RDC	Renewable Natural Resources Research Development Centre
Rs.	Indian Rupee
Sft.	Square feet
SHG	Self Help Group
SMS	Short Message Service (mobile)
SNV	SNV Netherlands Development Organisation
USD	US Dollar
VPMP	Vegetable Production and Marketing Plan
VVCP-E	Vegetable Value Chain Programme - East
WFP	World Food Programme

## Study Methodology

The purpose of the study was to observe closely the efforts and progress made by the VVCP-E programme. This would also help develop a strategy to scale up efforts in the future acknowledging the learnings and practical difficulties it faced. The study began with sharing of background information and relevant documents by RAMCO and SNV helping build on the current status of the project. The STADD research team studied the documents at its home location and developed its set of thoughts to seek answers to. Looking to the amount of data collected and reports published it became clear that the need was to arrive at an overall implementation strategy and not seek further data, a strategy that would enable RAMCO and SNV to switch gears to upscale the programme.

Following the above, a 2-week field effort was commencing from Samdrup Jongkhar on 15<sup>th</sup> November with a kick-off discussion with project functionaries of RAMCO and SNV staff, as also a DoA representative from Samdrup Jongkhar Dzongkhag. Preliminary clarifications were sought and observations made. A route plan was devised covering a 4-day tour of the eastern region and 7-days at the Indian market end. The field study effort was to close with a wrap up meeting scheduled for 26<sup>th</sup> November at Phuentsholing.

The field visit within VVCP sites of eastern Bhutan covered specific initiatives and sites that got highlighted at the kick-off discussion and formed a representative mix of community growers, visits to market yards, visits to schools functioning as clients to the School Feeding Programme, visits to OSFS', and discussions with FCB officials and market players. The visit to the Indian end focussed on visiting important markets; discussions with officials managing the market system, ASAMB in particular; and extended interaction with market traders, transporters, and other functionaries to build a picture on needs that would have to be addressed by the VVCP programme once increased vegetable volume was available for supply to the Indian market system.

A wrap up meeting was held a day earlier than scheduled on 25<sup>th</sup> November at Phuentsholing given changes needed in the schedule of Mr. Bhim Raj Gurung on account of the visiting IFAD Implementation Support team that ran concurrent with the RAMCO and SNV study. Observations made by FCB officials, RAMCO team, and SNV were discussed and noted, and were addressed in preparation of the final draft report.

The report largely takes a narrative approach broadly divided into 3 sections:

1. Introduction and Background – this section covers in brief details of the project to serve as a backdrop to an independent reader of the report who is not familiar with VVCP-E programme
2. Observations from the Field Visit and Market Visit – this section shares independent observations of the consultant on an “as is” basis highlighting key issues needing to be addressed
3. Implementation Strategy Plan – this section has been written in a more direct actionable manner to help build future plans and operational budgets drawing upon observations covered in the second section

The author would like to finally share that an independent pragmatic approach has been assumed while the study was conducted and the report recommendations as such need to be weighed against other impacting considerations. However the report is expected to function as a trigger for change since “business as usual” may not be the right approach to help farmers achieve their dreams based on confidence developed by them with their pilot effort.

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## Executive Summary

The VVCP-E programme is playing a pioneering role to seed the concept of turning eastern Bhutan farmers to become a vegetable growing region helping meet needs of food security backed by the promise of raising incomes for smallholder farmers through sale of vegetables in the domestic and Indian markets. As has been noticed with other development initiatives seeded, technological and cultural changes are not the only elements to be overcome to pursue a new livelihood option. The challenge of market penetration and aligning a farmer's work approach to needs of market functioning can be a big hurdle, and this is what the VVCP-E programme is helping the farmer overcome to make their pursuit purposeful by strengthening their ability to participate in a market based economy.

Given the foundations built over the last three years the farmers covered by the programme have till October 2013 been able to produce and sell 1,009 MT of vegetables of a total value of Nu. 16.58 mn. In all 104 farmer groups are involved, located over 31 Geogs out of a total of 70 within eastern Bhutan. One of the significant efforts grounded through the programme is the School Feeding programme through which 49 farmers groups are linked to 28 schools and 3 institutions for supply of vegetables. Under this programme farmer groups have supplied 163 MT of vegetables amounting to Nu. 2.94 mn. in a period of 9 months. This programme holds much promise and one of the recommendations would be that it has potential to be scaled up nationally to meet needs of food and nutritional security, also supporting livelihood needs of farmers linked as the supply line to it.

It would seem that however much we would like to see the market as a challenge with entry seeming difficult, it is really the ability of Bhutanese farmers to perform in tough conditions that will decide their competitive ability. This will need to be backed by optimised logistics planning and needed infrastructure and transportation support to cater to needs of growing production. Markets per se offer little by way of a barrier with Indian traders already sourcing from locations more distant and challenging to deal with. Most have shown keenness to source produce from Bhutan given the fact that the Indian market's huge demand considering the population it has to cater to. However to become an effective player in the system the norms of cost, time, and quality will have to be adhered to compete effectively during the Bhutan's growing season (May-Oct) termed as off-season in India when summer conditions and shortage of water lower India's ability to grow vegetables.

Considering the activity to be a relatively new effort and one required to compete with the established Indian production system tactical support will be needed but not in a manner that undermines the farmers ability to a point of excessive dependence. As such to increase coverage area and productivity within the growing area, support from the research and extension system, infrastructure, capacity building, and input supply through One Stop Farmer Shops, will be crucial.

Given below are highlights of the proposed strategy detailed in various sections of the report:

- First and foremost would be the need to scale up production and do it in a competitive manner by lowering cost of production, reducing overheads through raised volumes, complying with norms of markets, and equipping farmers in terms of technology and ability to meet the challenge ahead.
- Simultaneously efforts would need to be seeded to improve our ability to engage Bhutanese farmers with the market on balanced terms resulting in improved realisation from efforts put in by them. Optimisation of the supply chain, higher participation of traders, and penetration into new markets would need to be achieved through optimised logistics, information sharing, and infrastructure provisioning.
- Looking to the larger responsibility of meeting nutritional security needs of the nation through a well-balanced diet it is important that consumption of vegetables be stepped up within the Bhutanese diet. Given this goal VVCP-E would need to work to promote co-ordinated efforts fulfilling its own mandate to improve vegetable production and availability.
- Finally, to be able to effectively implement the above efforts, policy support will be needed and specific areas where such interventions will be needed have been flagged for consideration along with allied institutional efforts.

All in all the VVCP-E programme seems well poised to pursue challenges ahead but needs to gear itself up to meet the challenge of upscaled production and market linkage. While difficulties faced by farmers stand acknowledged, the task ahead calls for innovation and commitment brought about by raising the bar by bringing about a systemic change to past approaches practiced.

# Vegetable Value Chain Programme – East

## Scaling Up On Foundations Built

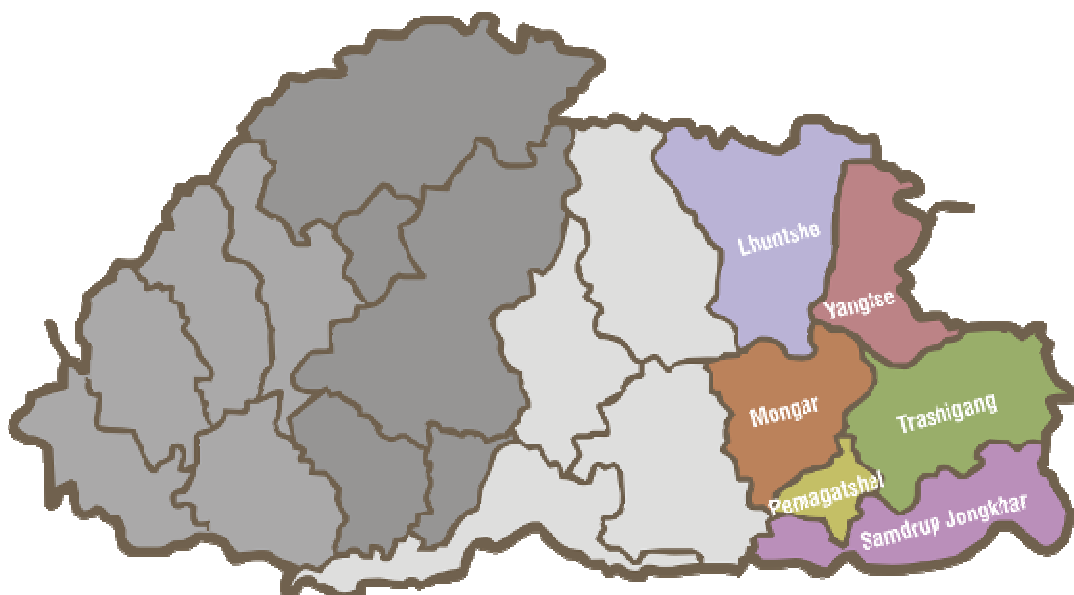
*Sanjeev Vasudev, Consultant SNV*

### INTRODUCTION & BACKGROUND

#### The VVCP-E Project<sup>1</sup>

The Vegetable Value Chain Programme in the east (VVCP-E) initially started as the Off-season Vegetable Programme (OVP) in July, 2011 under the Market Access and Growth Intensification Project (MAGIP), an International Fund for Agricultural Development (IFAD) funded programme implemented by MoAF in six Eastern Dzongkhags indicated below. Earlier the Agricultural Marketing and Enterprise Promotion Project (AMEPP), also funded by IFAD, preceded MAGIP helping develop the foundation for a sustainable livelihood programme in the six eastern Dzongkhags.

The aim of the VVCP-E programme is more focused, that to promote semi-commercial production and marketing of summer vegetables in order to increase income of more than 2,500 households from 5 to 15 percent by 2014. The programme is also in line with Vegetable Production and Marketing Plan (VPMP) of MoAF that pans out with similar objectives on a national basis.



***The six eastern Dzongkhags depicted in colour forming part of the VVCP-E Programme***

The main objective of the VVCP-E is to assist production of larger volumes of summer vegetable, explore both internal and external market opportunities, identify and facilitate both local and Indian traders for vegetable marketing, and to establish a needed marketing channel for vegetable marketing. In all there are 114 farmers groups under the programme covering 31 Geogs in six eastern Dzongkhags (out of a total of 70 Geogs). Major vegetables identified as having potential to produce and market on commercial scale are Cabbage, Cauliflower, Radish, Carrot, Beans and Peas.

The programme is steered by Regional Agricultural Marketing and Cooperative Office (RAMCO), a marketing focused unit of the Department of Agriculture & Cooperation; and agricultural sectors of the six eastern Dzongkhags. This combine is bolstered with technical assistance from SNV Netherlands Development Organisation (SNV) Bhutan, the Horticulture Research and Development Project (HRDP) supported by Japan International Cooperation Agency (JICA), and the Renewable Natural Resources–Research Development Centre (RNR-RDC), Wengkhari. As such it has a carefully planned consortium of implementation stakeholders.

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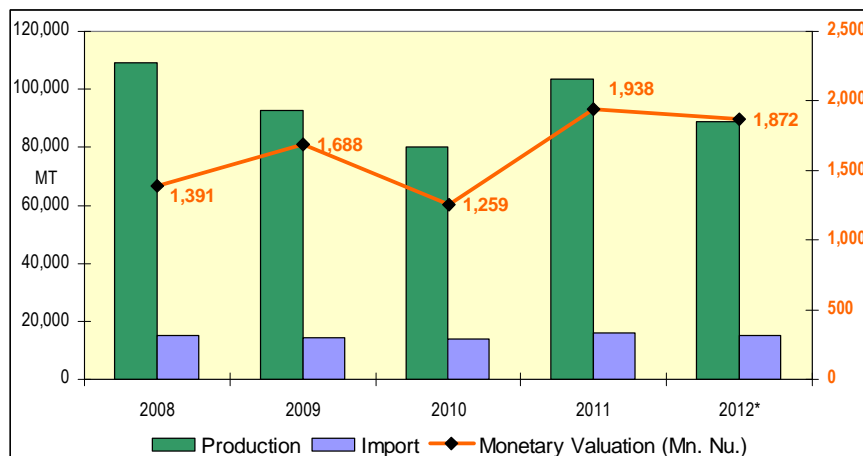
<sup>1</sup> Section adapted from report "A Brief Report on Vegetable Marketing Under Vegetable Value Chain Marketing Programme in the East (VVCP-E)" furnished by RAMCO

## ACTIVITIES UNDERTAKEN

In Bhutan vegetable production is historically not present as a business or considered lucrative owing to scattered and low population leading to poor economy of scale. Moreover, private sector involvement is minimal. However it will be fair to say that all households have been managing kitchen gardens and as such familiarity with the practice at large can be assumed to be inherent. Given this situation, the programme encourages farmers groups to upscale production through training and facilitation of inputs, building viable aggregation systems for affordable delivery of inputs as also linking these groups to local schools/institutions and markets for improving scale of supply and realisation of vegetables. Through this approach the farmer groups are developing confidence by pursuing a viable activity supported through market linkages, while on the other hand introducing fresh and nutritive vegetables into their own domestic diet.

Under VVCP-E, numerous activities have been carried out to enhance economies of scale and improve vegetable marketing by encouraging involvement of local and Indian traders. Efforts at the farmer end cover: training in cultivation, establishing a group as an aggregated unit, training in harvesting, packaging, and marketing practices; supply of inputs such as seeds, pesticides, equipment; and introduction of new technologies such as sprinklers and zero energy cooling chambers. RAMCO as the lead agency also helps coordinate activity in the field with line departments through the Dzongkhag office, promote logistics management and facilitation of linkages with the market, train and organise exposure trips for staff and farmers; other than contributing to matters of policy through its own parent body, the Ministry of Agriculture and Forests.

In 2012, 69 farmers groups have been involved with VVCP-E and sold 352.9 MT vegetables valued at Nu. 5.07 mn. In order to achieve self sufficiency by 2014, 104 farmer groups have been formed to produce and market vegetables in the east and as of October 3<sup>rd</sup> week, 2013, these 104 farmers groups had sold 416 MT amounting to Nu. 6.23 mn. Under the school linking programme (discussed later). A total of 49 farmers groups are linked to 28 schools, 2 institutes and one Shedra<sup>2</sup> for supply of vegetables as of October 2013. The farmer groups have supplied 163 MT of vegetables amounting to Nu. 2.49 mn. under this arrangement that has helped them benefit from this now found activity.



**Fluctuating overall vegetable availability and valuation over five years**

Source: RNR Statistics 2012

The magnitude and expectation from VVCP-E efforts to be pursued can be viewed in the backdrop of the national production figures denoted in the above graph. While imports seem steady since a higher price may have a bearing on offtake, the production and realisation figures seem to fluctuate, also not necessarily in consonance with another. The variability in valuation as compared to supply also denotes the state of markets within Bhutan that have yet to develop to appoint of maturity.

There are 106 schools (59 boarding and 47 day-feeding schools) in the east that provide meals to students. The total requirement of vegetables is 1,499 MT per year amounting to Nu. 23.53 mn. and

<sup>2</sup> A Buddhist centre of learning home to monks offering offers basic education, vocational training, and the opportunity to pursue traditional Buddhist studies at the highest academic level.

this can form the basis for stable growth of the vegetable production programme under VVCP-E. It can also greatly contribute to giving the farmers a minimum threshold of activity on which they can build independent market supplies. The farmer groups have been strengthened and supported to meet delivery needs of vegetables for schools (also serving as an import substitution measure) while newer groups are being looked at as an ongoing exercise.

## UNDERSTANDING THE BHUTAN CONTEXT

While many studies have been carried out by RAMCO and SNV detailing features accompanied with supporting data, the author has chosen to selectively highlight own observations to serve as a background to justify the implementation strategy discussed later in the report.

LAND HOLDING<sup>3</sup>: Bhutan has (i) a low population density with less than 45 people per sq. km, and (ii) out of the total land area of 40,076 sq. km only 311,098 ha or 7.8 percent is agricultural land. The area suitable for agricultural production is limited on account of the steep and rugged terrain, altitude and a high priority given to maintaining forest cover. *Kamshing* or dryland accounts for the largest area of agricultural land, followed by *tsheri/pangshing* or shifting cultivation. *Chhuzhing* or wetland is used primarily for rice cultivation, accounting for around 1 percent of total land and orchards account for less than 1 percent. Almost 4 percent of land is used for *tsamdruk* or pastures.

Landholdings are fairly evenly distributed in the country but fragmented with small parcels of land in different locations. Majority of farmers own only a limited amount of land, with around 33 percent of farming households owning less than three acres each, that too in fragmented holdings. In fact, more than half of the total farming households (55.7 percent) own less than 5 acres each, accounting for one third of the total agricultural land.

GEOGRAPHY & IMPACT ON DAILY LIFE: Bhutan is a land locked country characterised by difficult terrain whose physiographic features can be seen as both lending advantage to the country, and posing management and operational challenges as a disadvantage. Even though population is small, the land:population ratio too is low given little land available for agriculture. Much of land is forest land that cannot be deployed to help rural communities eke a livelihood for themselves. This issue stands further compounded on account of climatic and geographical features posing tough challenges for livelihood pursuit. When activities are undertaken in spite of difficulties faced, competitive ability gets impaired given the effort, cost and time taken for operations. Remoteness has a huge impact on daily functioning and severely impacts aspects of food security, with escalating inward cost of food delivery becoming unaffordable over time. This situation will get compounded through diversion of land for production of cash crops. Building resilience and self-sufficiency thus assumes a high priority, and this followed by income generation through a well understood market system seems a prudent approach.

CASE FOR HORTICULTURE: Just as in other Himalayan regions with limited livelihood options available, horticulture pursuit in Bhutan offers hope and within it vegetables work well as a short gestation and flexible option. It is also something that comes naturally to the farming community, doesn't pose technological barriers, and can give good returns if managed carefully. However unlike agriculture, vegetables need more tending, are perishable, and subject to market risk. As such rural families need to arrive at an ideal mix of land and time management to take upon themselves the activity to a level that they can manage. Once comfort of operation is established, productivity can be gradually raised accompanied by increased land coverage. This gradual stepping up would also suit a farmer's learning and coping scale to deal with elements such as credit, market, and managing increased coverage by taking one step at a time. Further, increased scale of production needs a boost in terms of capital infusion and it is best this step is undertaken once a stage of operational and financial stability has been reached by the farmer and they are in a position to take a limited risk. If this is managed well, horticulture pursuit as evidenced by initial experiences of VVCP-E farmers offers good potential to be a source of income earning for very many farmers on a sustained basis.

UNDERSTANDING MARKETS: Markets and the act of marketing are relatively new concepts when it comes to Bhutanese farmers and its agricultural system. While markets may seem a simple function

<sup>3</sup> Source: <http://www.foodsecurityatlas.org/btn/country/availability/agricultural-production>

in the chain and may seem easy to handle, reality is quite different. The biggest mistake most stakeholders outside the market system make is to assume that the market is a static function waiting for sellers to arrive. One shouldn't blame the seeding of this thought since markets as presented in initial phases of development are largely managed with government intervention thus reflecting stable behaviour, and offer instruments such as Minimum Support Price. Functioning of markets today are characterised more by volatility rather than stability and while we may be able to steer our way through the system, an unexposed farmer may not find it easy to do so.

The dynamics of demand and supply and the dominance game played between traders and producers is something that needs to be well internalised on both sides to develop a stable relationship. It also needs to be understood that markets are not owned or managed by anybody but largely a reflection of prices influenced by demand and supply of goods being offered. With opening up of economic activity the number of players and options are unlimited and finally it will have to be the producer who needs to change and compete. This change needs to be handled through soft interventions such as awareness, exposure, and training on a continual basis and this is where the importance of an organisation such as RAMCO gets established, who can gradually expose farmers to market working helping them avoid pitfalls in their course of this new journey. This will of course need to be backed by the needed budget and mandate to enable effective functioning of the change management process.

Dealing with the market demands a change in mindsets of all involved, from the policy maker to implementing agencies and the farmer to traders. This change too needs to be understood as a dynamic, linked to changing times. As such the farmer needs to be open minded to change and to quite an extent be willing to make adjustments. What also needs to be understood is that the buyer has the right to demand what he wants since he is paying for the goods and bearing the onward risk thereon. As a seller we can not pursue our actions if we have to catch the attention of a buyer and so have to offer our products in a manner that interests them. Of course if a seller is able to gain respect through their quality or manner of committed dealing, they too will be able to one day raise their own demands; something they can also do when vegetables are in short supply.

THE INDIA INFLUENCE: Bhutan and India enjoy good relations as evidenced by the open trade and currency exchange ability between the two countries. India has jumped substantially in economic terms over the last decade and forms part of Bhutan's support circle from the very input stage to realisation of returns from markets. However its produce also serves as competition to Bhutanese products that cannot compete easily given aspects of remoteness, low scale, and lack of knowledge at the Bhutanese end. Thus exists a situation where Bhutan needs to depend on Indian products and services, yet needs to continuously strive to compete against them to achieve a degree of self-sufficiency to serve Bhutan's national interest.

A case in point is the prevalent situation of poor availability of Indian Currency within Bhutan. This puts a pressure on all procurement at the Bhutan end that further reduces its ability to compete with supplies from India<sup>4</sup>. Given aspects of long term stability this is one of the major reasons why Bhutan needs to raise its production ability for basic daily products such as vegetable and fruit. For one it will reduce the pressure on its foreign exchange. The VVCP programme thus bears additional responsibility to fulfil this need and if supported from a long term goal point of view, can turn around the situation where Bhutanese grown produce will not only be able to meet needs of supply of fresh vegetables within the country, but will also earn precious foreign currency to reduce the exchange parity load.

CHANGING THE MINDSET: As we may have realised, eventually it is all about changing the mindset of functioning stakeholders. Most programs do take care through components of advocacy, awareness building, training, demonstration, and exposure visits; yet best of efforts invested and even carried out well can fail to motivate and change mindsets of those involved. As an example, the concept of scale of production and distribution of overhead and logistics costs over a larger production or supply unit needs to be understood by farmers. If production is raised and smaller units develop into larger clusters, costs reduce and products can become competitive. Training also helps imbibe a professional culture of working that helps cope with shifting situations since competencies to cope with competition stand developed. Pursuing an activity limited to a point of convenience can never make it competitive.

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<sup>4</sup> This however will present itself as an opportunity once Bhutan is in a position to export goods to India

While on the subject, one should not expect the onus to be solely on the rural community only because this example can be cited as being equally applicable to implementing functionaries. Policy makers and functionaries involved with implementation whether from the governance, technical, or project management stream have across various locations in the world shown to have a limited understanding to the subject of markets. This has then reflected in poor investment of time and money for such efforts, much needed on a prolonged basis. It has been noticed that once things speed up, the farmer many a times will change faster since they realise how important it is as an element to turn around their economic state.

THE POWER OF AGGREGATION: Given the fragmented land and human placement within the mountain country it is common knowledge that the cost of production and harvest produce will be high. Given the understanding that the market does not accommodate such factors and uses the price as an "all acknowledged" indicator, there is no option but to reduce cost of production and delivery to match prices of other suppliers who the market has an option to buy from. This may be easier said than done but points to the importance of this aspect if Bhutanese produce needs to develop competitive ability.

Working through the "group" system improves competitive ability given the ease and optimisation of managing inputs and harvested produce. However humans are happy to work on an individual basis, seeking help only when needed and to the extent needed. This trait needs to be understood deeply and addressed for farmer groups to become a competitive and sustainable entity. Sadly formation of groups is now pursued as a target based activity and the real need of nurturing is not pursued, leaving many groups formed but most struggling to achieve their potential and survive. This aberration needs to be addressed to help build the strong foundation on which a vegetable production based livelihood system can thrive. Investments need to be made on an ongoing basis to help the community find its point of cohesion and common operational comfort, yet allowing individual or a smaller group of more enterprising entrepreneurs to chart a faster growth trajectory independently. It is this aspect that has encouraged NABARD in India to promote the concept of Joint Liability Groups (JLGs) in the face of a massive SHG formation drive and experience thereof. A JLG consists of 3-7 members formed from the same or different SHGs but those who have the drive to pursue an enterprise based activity on their own without having to take the entire SHG along.

The above points help capture the nuances of a developing country such as Bhutan and these are not unique to this country since similar situations can be found in locations all over the globe. Fortunately the high level of responsive interaction between the governance system and the community as noticed in Bhutan can help overcome these barriers in a faster manner than other countries, given Bhutan's commitment to grow sustainably. It is this opportunity that all of us must realise and work towards at a hurried pace.

### **THE DEVELOPMENT PRACTITIONER'S DILEMMA**

Planning for regions such as Bhutan needs to be carried out smartly and this becomes relevant particularly considering the shift for communities living presently in a closed system, and the contemporary need to integrate with the outside world through a market-led livelihood system. As discussed earlier, the process of change management has its own set of dynamics serving as a challenge to an otherwise well settled community. It is thus important to understand the development context and these need to be viewed as realities, and constraints to development of activities expected to find a route to the market system.

- a) While natural resource endowment is available aplenty and rural communities are comfortable dealing with it as a raw material, it all eventually boils down to coping with markets and dealing with cash; activities the communities find themselves at a disadvantage to address. There is also the pressure to tune to needs of markets that becomes difficult as communities are used to traditional ways of working, handed down over generations by wise elders where bringing about a change in functioning is not easy. While youth offer hope, their interest in the subject of agriculture is waning and migration is a constant dream seeming the only way out for them.
- b) With pressure growing on utilising forests either for income generation or for needs of household fuel and fodder; agriculture offers itself as an activity to communities to meet needs of food and income. However the market system is the final connect for scaled up production, and demands farmers to function in an evolved manner and this expectation

can challenge the farmers functioning in the short term. As if the challenge of the market is not enough, the farmers have to face uncertainties of nature, wildlife attacks to crops, and lack of adequate knowledge to pursue farming activity in the face of climate change and market functioning, that otherwise seems like a relatively simple activity. However given the circumstances and limited choices in a remote rural setting, agriculture (and horticulture) still offers the best hope.

- c) The act of farming and horticulture pursuit is based on behaviour of nature and in recent times this has become even more complex challenging the best of farming talent. This uncertainty combined with the higher cost of farming on one end and uncertainty of markets on the other makes farming in vulnerable regions like Bhutan a risky pursuit. Even if managed well, costs are at a high that points to pursuit of a niche approach that yields higher value to the farmer as the only means to justify pursuit. However this assumes that an ability to deal with the market system is present in those involved. Finally moving to horticulture by abandoning agriculture does not bode well for needs of mountain regions as has been noticed in many other mountain locations. Need for traditional local foods, their availability at an affordable cost, and self dependency at moments of natural and man made calamities is enough reason not to abandon support to smallholder subsistence farming.
- d) The community's own motivation to pursue a competitive activity many a times holds them back, and state support or social security while starting out as a noble intervention only adds to the lethargy prevalent. The showering of largesse by a concerned donor community or the government only compounds the problem of the rural community already grappling with change that is not easy to make happen. Doling out free components in the hope that it will make communities competitive cannot help them overcome other problems needed to be addressed by rising up to challenges faced. In such circumstances handing out of freebies only adds to weakening the system, further also creating an expectation mismatch since endless funds are not available to please all.
- e) The task of capacity building becomes arduous given the sheer area coverage and demand for qualitative infusion. It is not surprising to see poor results in spite of huge budgets spent, suggestive of the human mind being complex and not wanting to change it would seem. It has been noticed that training and capacity building is pursued with much vigour at a programme/project level but on most occasions have limited impact. This could be on account of either the course content, its delivery, or sheer under-effort on account of resources put in, financial or human. As a result while training targets get achieved to justify deployment of funds, outcomes have been poor. Most development projects on their closure have in reality not been able to make the set of rural livelihood pursuers as independent as they would have liked to see them, in spite of the huge amount of resources deployed. What is disturbing is that this pattern is then pursued *ad nauseam* albeit many a times with minor changes supposed to convey an improvement from past learning, when what is needed is a well thought of systemic change.
- f) Convergence between functioning agencies is a realisation that dawned on governance practitioners more than a decade ago in our region. However in practice each stakeholder still ends up first prioritising on their own pursuits. This is to be expected given the independent sources of funding given to each agency with independent accountability governing future prospects of the agency or its functionaries. However it does not bode well in terms of efficacious delivery of the development package in a converged manner at the farmer level. Few successes are noticed and much effort goes in managing relationships and sensitivities ensuring toes are not stepped on. This poses itself as a big challenge to effective development effort since the farmer is left in the lurch, confused not knowing what to do.
- g) Changed practices not only bring about a strain on one's routine functioning but many a times also needs supplementary inputs, adding to time and more importantly costs. In this regard, while the private sector players make an entry into a region by offering goods and services, it is not the more responsible but the opportunist who makes the first inroads harming interests of the community creating breach of faith to the process of change. This

not only points to the need to establish more institutional hubs such as One Stop Farmer Shop (OSFS), but also points to its responsibility to function in a sustainable manner.

- h) As stated earlier, marketing as a subject is plagued by poor understanding of not only involved farmers but also functionaries of the non-profit and government system. As a result budgets are very stringent since little can be found by way of evidence in the short term for them to justify investments made. It is sad to note that this underinvestment in knowledge and capital terms just adds to the woes of market development. Marketing is about creating self-dependency to take decisions and pursue needed activities in an open manner, however it is viewed as the responsibility of a few manning marketing positions to bear the responsibility of bailing everyone out, when they need help. This spontaneous approach to marketing couldn't be more displaced since the effort of marketing needs careful long term planning and execution. Thus a larger understanding needs to be developed that influences a positive environment, seeking support of policy and budgets to pursue a long term goal. In particular one needs to think through carefully about the interaction platform between growers and markets, both needing each other yet normally not suited to deal with each other.
- i) Finally the factor of unpredictability and hence risk management processes to be applied to market functioning calls for constant monitoring for all operational arms of the institutional system. The lack of understanding on part of most stakeholders only adds to the difficulty since farmers in particular tend to see it as a static system, and one that waits for them to bring in their produce to sell. There is a need to make farmers and functionaries understand that markets don't wait for anybody and that no one can predict its movement that is largely a result of the system of demand and supply. It applies equally while developing coping systems to manage natural shifts that we have little control on.

While those living in this situation may have been forced to accept the situation given lack of choice, development practitioners mandated to improve the situation are faced with challenges impairing their ability to deliver effectively. Every intervention thus needs to be carefully planned since many who are to benefit from it are looking up to the providers with hope to achieve success almost to a point of guarantee. This is where the importance of organisations such as RAMCO and SNV supported by other technical institutions gets highlighted. For one it is to them that the farmer looks up to with hope, and the institutional combine needs to not only manage the sensitivities of the farming community yet address competitive aspects of the market – all within the outlined mechanism of the departmental framework of functioning.

## Observations from the Field Visit and Market Visit

## OBSERVATIONS FROM THE FIELD VISIT AND MARKET VISIT

The study team during its field visit covered 3 schools attached to farmer groups; 7 farmer groups; 4 OSFS locations; and many Indian markets along the Samdrup Jongkhar-Guwahati and the Guwahati-Phuentsholing corridor. Visits were also undertaken to the Samdrup Jongkhar and Phuentsholing markets. Given the limited time and focused mandate of the study, the observations largely cover aspects that influence areas of VVCP-E's project engagement. The number of visits carried out gave a fair idea to the study team of problems faced, many common yet some unique; and this gave an opportunity to study at close quarters the issues that could be fixed to improve overall delivery. This section deals with specifics observed in relation to key elements of the programme gathered through observations and interactions.

### SCHOOL FEEDING PROGRAM

The national school feeding program mandates a residential boarding school to provide three meals a day to all boarders. On an average each school has around 400 boarders thus creating a good market for vegetable supply. The program was initially managed by WFP that as part of its mandate had to source material from various locations in the world and prevented procurement of local material, a decision carried out to meet WFP's operational and accounting framework.



***The boarding school at Orong is located at a distance of 15 kms from the main road and has a student complement of 550 of whom 520 are boarders. The school procures 4 MT vegetables per month from 2 farmer groups, other than procuring 4,200 eggs, 240 kg, meat, and 5 cartons of 36 tins of tuna fish from the open market***

It is thus heartening to note that RGoB took over this program from WFP in 2009 that allowed it to not only improve its coverage but also structure it to meet larger national needs. For one it allowed local procurement of materials thus benefiting the local farming based economy. Procurement is done through a system of negotiation backed by a contract signed, with strict monitoring done to ensure compliance on lines contracted.

The group-school linked program covers supply of fresh vegetables for nine and a half months a year, and has helped build the following advantages:

- Fresh and timely supply of locally grown vegetables to schools in the region
- Good quality organic supply of produce
- Reduction of procurement bother for schools contracted with
- Procurement at a contracted rate helping achieve the planned budget
- Improved source of livelihood for remote farmers
- Rationalisation of vegetable prices and increased availability in local markets
- Increased self-dependency and reduction of vegetable imports from India
- Improved nutrition condition of children living in remote regions
- Realisation in families that vegetables can be an important component of the Bhutanese diet
- Improved mutual respect between the two institutions involved, the school and the farmer groups, eg. on occasions when there is delay in government receipts, the groups were willing to accommodate delayed payment on behalf of the school
- Win-win situation for both school and farmers given the saving on logistics and marketing cost on a regular basis, and local community building spirit

The program can without doubt be pronounced to be a huge success and something that more developed nations, neighbouring India for one, can learn from. Among other aspects they would need to learn from the commitment of the government, and the conversion of the given opportunity by the actors; the schools and farmer groups, supported by efforts of the Dzongkhag, and implementing agencies such as RAMCO and SNV.

Vegetables constitute nearly 35-40% of the procurement of a school's feeding program budget. The Dzongkhag Education sector budget is Nu. 1,000 per child per month<sup>5</sup>, and as indicated nearly 40% or more goes towards vegetable procurement. As an example the Jampeling Higher Secondary School has 210 boarders and receives Nu. 210,000 per month to execute the feeding programme, of which nearly Nu. 85,000 is the vegetable procurement bill. Viewed another way, the Tashitse Higher Secondary School at Wamrong has 615 students of which 559 are boarders. And here 3-4 groups are tied up to the school and roughly more than 6 MT of vegetables are procured every month.

Supplies are sought for a 9.5 month period from Feb 15<sup>th</sup> to Dec 18<sup>th</sup> when the school is functioning other than a 15 day break starting July 15<sup>th</sup>. The lack of supply link for 2.5 months gives an opportunity to farmers to connect to local markets and gather experience in that regard. Teachers take turns to be Mess Secretary with a change every month on a rotational basis. However some schools stayed fixed with the chosen team throughout the year. The Menu Plan has not been scientifically drawn up but would reasonably meet needs of child nutrition, deserving a scientific look in any case.

A contract is entered into between the groups and the school that lays down a fixed price of supply among other terms of delivery for the annual term of the contract. Price revisions are carried out only at the time of signing a new contract and it is noticed that inflationary movement does tend to put a bit of strain on the system during the latter period of the contract.

In spite of the satisfaction expressed by all school functionaries met, scope for improvement was noticed by virtue of the feedback received. Observations below help capture niggling points that emerged in the functioning of this otherwise successful arrangement. These need to be viewed in a positive manner to clean blemishes helping achieve a stage of perfection that we would recommend be used as a basis to roll out the program nationally from eastern to western locations of Bhutan.

Many a time farmers are not able to supply vegetables as needed by the school. It was cited that while there was a need for carrots and this was requested time and again, the farmers would end up supplying cabbage in excess of the order placed to compensate for short supply of carrot. On another occasion large potatoes were ordered but small potatoes were delivered to the annoyance of the school having to deal with them at the cooking stage. Ideally, the school would like to procure a mix of vegetables as demanded by their Menu Plan, drawn from needs of nutrition and also looking to the variety needed by students in their daily meal. Other points observed were:

- With market prices of vegetables going up, there could be a threat to supply of vegetables as ordered even though a contract had been positioned with penalties.
- Many a times the responsibility of order taking and delivery is handled by a group leader with the group being ignorant. In one instance the leader passed away on account of an accident and that proved to be a setback for a few rounds of supply since the group had no idea of managing that responsibility. (This is a rare case, and further is also the responsibility of the Group Coordinator as well to manage selling of vegetables to school).
- Some commented that group dynamics were weak and as a consequence the leader may be benefiting to a larger extent.
- There was no provision to pull up or change a group on account of non-performance and the school had to continue with groups contracted with till the end of the annual term.
- At times, groups hadn't planned their schedules well and ended up buying from the market at a loss to meet their commitment. On the other hand it was noticed that a group had undertaken responsibility to supply onions even though they had no committed growing plan for it.
- There were occasions when all groups tended to land up at the school requesting that vegetables produced be purchased, even though on rotational basis it was not their turn but that of another group.

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<sup>5</sup> This stipend can now accommodate more vegetables from the 2014 school session as cabinet has decided that government will henceforth bear the transportation cost of food supplies to schools. Source: <http://www.kuenselonline.com/food-stipend-for-food-only/#.UuYV9hDxK00>

- There was constant pressure from external market based vendors to offer vegetables at cheaper rates but these were of imported nature and the quality may not be good on account of use of inorganic pesticides and fertilisers for cultivation.
- Packaging and harvesting techniques needed to improve since with vegetables supplied once a week, deterioration in their quality could be noticed in the latter part of the week.

### FUNCTIONING OF THE COMMUNITY PRODUCTION SYSTEM

For a farming community not earlier introduced to vegetable production as a regular means of livelihood activity, the VVCP-E groups reflect a positive attitude towards the activity taken up. This stands reflected not only through the production and sale figures over last year but also their enthusiasm and understanding as evident from various farmer groups meetings held.

However this positive enthusiasm will need to continue for the next few years till they have extended their growing land area into a more viable unit and also are willing to engage with market forces on the input and output side on equal terms. It is thus very important that their confidence be bolstered, while the path of upscaling they agree to undertake be cautiously planned. Handled well this could make a world of difference to their newly found pursuit and spell success for the VVCP-E programme in clear terms. Certain points noticed by the study team are shared below.

#### Farmer Groups Met

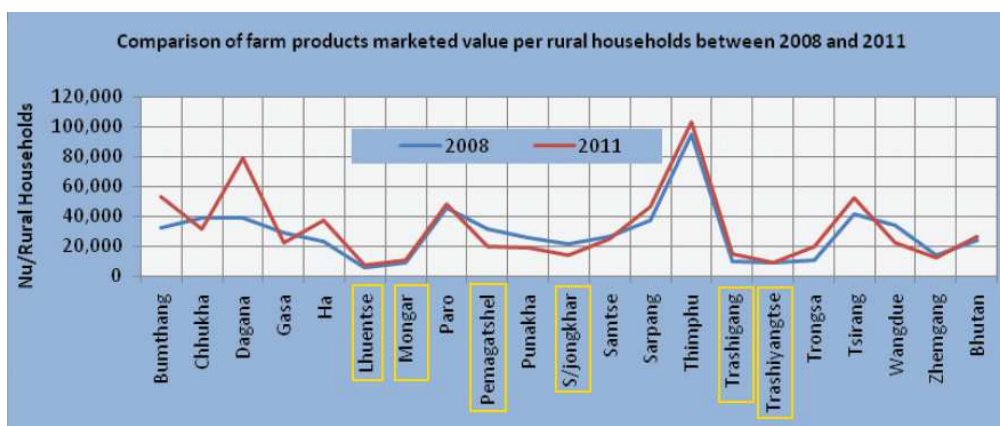
*The following groups were met with, mentioned by location and number of members present in the group.*

- Khaling – Pashong (18 members) and Dawzor (19 members)
- Lumang – Reserbu (13 members) and Kheshing (11 members)
- Zobel – Tshlingkhor (10 members)
- Bidung – Dori (7 members) and Lemphang (16 members)

### Observations

The introduction of the vegetable growing programme for farmers in eastern Bhutan has brought about hope for a means of livelihood possible within the environment they function, managed through processes they understand. However these two overarching aspects end up covering only one side of the entire process, one where the farmers can manage growing and harvesting of agricultural/horticultural produce; but are left to cope with the functioning of the market system, a concept relatively new to the people of Bhutan. The challenge posed by the market system needs to be viewed as a short term entry barrier as evidenced at many similar locations, one that farmers can learn about to cope and later develop the needed confidence to engage with on equal terms.

The graph below serves as a reminder to the urgent need for raising incomes of involved households. As can be seen, the 6 eastern districts (highlighted with a yellow box) are placed at a relatively low scale of income from farm products compared to other districts, with little to negative change noticed over a 3-year period barring Trashigang. Vegetable production if pursued well by farming communities can change the look of such a graph, at least for households involved, if drawn up by the end of the VVCP-E project period in 2015.



Source: RNR Statistics 2012

Observations shared below have been culled out from farmer group meetings, discussions with project stakeholders such as functionaries and trading community, as also the consultant's past experience<sup>6</sup> of having worked in Bhutan. The thoughts largely cover observations on an "as noticed" basis while the next section takes a strategic look at what needs to be done for the VVCP-E programme to scale up the production process sustainably.

- There is huge market potential for vegetable both domestically and for export. Based on the requirement of 200 g vegetable per capita per day, Bhutan needs 54,445 MT annually. The total domestic production is only 30,595 MT per annum (56%) that leaves 23,850 MT (44%) to be imported annually. At present it has been determined that the country is meeting only 139 g per capita requirement. In 2011, the national figure for vegetable import was 11,619 MT amounting to Nu.170 million.<sup>7</sup>
- Communities are beginning to look at vegetables as an option that can meet two needs, that of own food security and also a cash crop. The feedback from communities indicates some internalisation in this regard but still needs to be reinforced so that non participating farmers may emulate the example willingly, while those initiated also increase their own stake further in its pursuit. In any case both need to develop confidence to improve the capitalisation stake in the sector.
- Soil health is an important aspect to be addressed from a long term point of view alongside addressing short term needs of yield improvement. This needs careful consideration to be addressed by the research system and may call upon bringing about systemic improvements while pursuing agriculture. Natural practices may need to be looked upon or even practices such as Conservation Agriculture that can address the issue of soil health to improve productivity. This will also ensure that as and when the intensification process kicks in, it is conducted in a measured and carefully planned sustainable manner.
- In spite of consistent efforts made, farmers continue to pursue conventional post harvest practices such as (i) supplying harvested vegetables without grading and sorting, (ii) stuffing bags with excess load damaging the produce in an effort to save on transportation cost or market cess levied on a per bag basis, and (iii) each one accompanying their consignment to the market causing precious waste of time. Grading, sorting, and appropriate packing practices are easy to adopt with low cost implications, and will work for farmer's own good since buyers (traders) are willing to pay more for sorted and graded produce that have been packaged appropriately.
- It was good to notice that many groups have understood the need to tune production to needs of the market. This change has largely been brought about on RAMCO's own realisation, and effort followed to share information on needed crop practices with farmers.
- While pilots have demonstrated the viability of vegetable production the scale is still too low, even if meeting demands of Bhutan's internal markets is assumed as a first target. While it can be viewed as a step up from a kitchen garden cultivation to something more substantial it is still short in terms of numbers to compete in the market. This has to be accompanied with farmers finding courage to increase their stake in vegetable production.
- Scaling up efforts need to be technology driven and appropriate and affordable technologies need to be demonstrated, proven and introduced through the OSFS linked system. The input supply chain and aspects of affordability too need to be addressed if a scaling up of production is to be set as an expectation. Among other expectations, farmers expressed a desire to be supplied seeds, fertilisers, irrigation equipment, and greenhouses/ poly houses with the requisite management training. Many a groups expressed the need for an OSFS to be available at an accessible distance. With regard to supply of inputs, cost sharing needs to be strictly adhered to now that examples of successful diversification are visible for all to

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<sup>6</sup> STADD is familiar with the VVCP project area over the last 5 years having been part of the AMEPP and MAGIP projects as an IFAD team member managing the portfolio of Market Development.

<sup>7</sup> Source: RAMCO study on "Cost Benefit Analysis of selling vegetables in different markets from six eastern Dzongkhags", December 2013

observe. A subsidy based system over time won't allow farmers to develop a competitive spirit especially in the face of cheaper imports, or even for plans being drawn up to export.

- Input supply can not be done in isolation and in particular needs a high quality extension delivery system to be positioned. There is a need to look at the functioning of the extension service currently being seen exclusively as a responsibility of departmental functionaries. New models need to emerge to increase width and depth of reach, particularly since coverage area too is being recommended to be increased. These also need to be pursued in an integrated manner with efforts of OSFS, input supply, markets, and those of the Department.
- Caution needs to be exercised to keep cost of production low. Considering the amount of subsidy extended there is a need to look at costs of production that if high will be self defeating to the growth of the vegetable initiative. This will prevent it from proliferating economically, and definitely from competing in internal as well as external markets. If difficult geographical features are cited as a reason for this, a study should be undertaken of similar Indian and Nepal regions to understand how they are able to produce vegetables competitively. However to be fair, considering the activity to be new, this measure can be pursued on a short term basis but needs to correct itself if efforts have to become competitive. As such a scale down exit plan should be positioned before initiating this culture of "freebies".
- The school feeding program offers itself as a secure option to those groups having tie ups with them and this was evident from responses of farmer groups as well as school functionaries met. However, the farmers need to move beyond this assured supply line to grow their markets independently that will need a fresh project intervention. Dependency on each other at an annual committed rate is bound to start putting pressure on the relationship when market price variations occur beyond expectations skewing the advantage in favour of one or the other.
- Capacity building that many a times is handled as a start-up initial activity fails to achieve much and the process of capacity building needs to be invested in on a constant basis. While in the initial phases training is needed to expose and familiarise farmers with an approach or a technique, follow up efforts are needed to improve and reinforce their learning, later to be followed up with need to cope and manage to compete in an upscaled environment. Views were shared voluntarily by farmers that those who adopted newer techniques of farming gained much in productivity and return from markets. This needs to be viewed as a positive point of start to invest further in capacity building efforts.
- Among other things, financial literacy seems low thus contributing to vulnerability and higher dependency, with mostly based on trust. While trusting is a good quality, enabling the farmers to take an independent judgement based decision would be more important. This needs to take the shape of financial literacy based capacity building and exposure efforts where role play can be a very effective method of delivering the learning content.

### **ONE STOP FARMER SHOP (OSFS)**

Looking to aspects of remoteness and the need to make available products and services for farmers within their reach, the OSFS raises hope to fulfil an important need. The establishment and acceptance of OSFS serves as a means to improve access to agricultural materials for farmers in remote areas as well as serve as a marketing outlet for produce harvested. If one has an idea of the remoteness that challenges everyday life in mountain regions, it will not be difficult to realise the potential of this concept. 13 OSFS' have been established in the eastern region, typically as a 35 sq. mtr. hub located at prominent locations along important highways/roads and managed as an enterprise by an identified family. Given seasonality aspects as also the low footfall frequency the OSFS have been allowed to sell a few household items and have a tie-up with FCB for their goods.

The current disposition thus points to the OSFS in reality as being a hub with a relatively small expectation that in fact may undermine its functioning over time from a viability point of view particularly if the capital investment made is considered. It is thus important to acknowledge that as the system is new and evolving, careful planning & implementation needs to be gone into to bring improved relevance and scale to OSFS operations. This is also important given the upscaling and diversity of operations of agricultural activity over time that necessitates viewing it as an important component, not necessarily as what it started out to be. Observations with regard to this are presented below.

## Current Status

Ever since their introduction as Farmer Service Centres in year 2010 forming part of the IFAD funded MAGIP project pilot, the OSFS is constantly improving to gain a new identity and purpose. A total of 13 OSFS' have already been established by the Ministry of Agriculture through the Dzongkhag administration. Further a total of 12 more are to be positioned at chosen locations. These are of varying sizes with different stocking levels that largely reflect the need of the region. However while the constructed building is symbolic of its establishment, its real purpose can be gauged from its utilisation, sale proceeds, and footfalls for both agricultural inputs and harvested produce. With relation to this the following data presents the current scenario:

Average cost of an OSFS establishment (excluding land contributed by beneficiary): Nu.1.34 mn.

Annual turnover: Nu. 0.403 mn.

Average margin % on sale of inputs & tools: 10% for seed & fertilizer input & 15% on tools

Output sale is as per market price 15%

As can be seen, for an average investment on an OSFS of Nu. 1.34 mn. each, the annual sale itself is only an average of Nu. 403,613 representing a very poor figure, a problem that gets compounded when you assume average earning margin to be 15%. At even this margin the annual earning before expenditure works out to be Nu. 60,542 or roughly Nu. 5,000/month that may not be enough to even take care of even the expenses. As is evident, it will only be a matter of time that the owner/manager of an OSFS will run into financial difficulty as they withdraw funds for consumptive use from capital proceeds. This will eventually lead to first reduction of stock levels and later possibly closure of operations or diversion of funds and time to other activities turning the OSFS into another wasted investment that did not meet needs projected.

As a case in point, a visit to the PAM OSFS revealed the following figures:

- Land belongs to the beneficiary, while the building structure has been created with RAMCO support costing roughly Nu. 0.84 mn., with Nu. 0.05 mn. given as seed money to entrepreneur to procure initial stocks
- Sale of implements and tools every month: Nu. 8,000 to 10,000
- Sale of seeds and fertilisers per month: Nu. 12,000 to 15,000
- 10% margin on seeds and inputs and up to 15% on other goods
- Monthly expenditure without including return to entrepreneur: Nu. 10,000

It's not difficult to see that the current annual expenditure of Nu. 120,000 is only being covered by a return from margin on sales to the extent of less than 50% which suggests a cash loss and an erosion of working capital of Nu. 50,000 before the end of the year. The figure also suggests that a minimum sale of Nu. 200,000 per month would be needed to cover costs and leave only a marginal return to the entrepreneur for effort made. This would suggest a need for turnover increase of 6-7 times over the current sale and this can not be achieved by pursuing the routine approach.



**An OSFS located at Morong, Samdrup Jongkhar (left) and an inside view displaying some of the items stocked (bottom)**



## MARKETS

### Markets within Bhutan

The concept of organised markets is new to Bhutan. Most markets are of retail nature and major organised wholesale markets at the first tier operate out of three locations, (i) Thimpu Centenary Farmers Market, (ii) Phuentsholing in western Bhutan, and (iii) Samdrup Jongkhar in eastern Bhutan, the latter two managed by FCB. The second tier has bigger markets, prominent being Sarpang, Sipsu, Gelephu, Samtse; the last two also managed by FCB and having their importance emerging from their location at a vantage point on the Indian border. Finally the third tier consists of roughly 15 regional markets (mostly at Dzongkhag level) that have local farmers linked to them from nearby growing areas. This category of market can be assumed to function as retail markets that can graduate to being semi-wholesale markets in days ahead. Many a times these markets take the form of being located in close proximity to institutions such as hospitals, hydropower projects, or defence establishments looking to the inherent need and demand.

The smaller markets can be considered as a beginning made to enter the market mainstream system through establishment of infrastructure, regulation, and processes to allow them to grow in years ahead. Volumes are low, seasonal, focussed on a few commodities, and with a small number of traders functioning. The small number of traders may typically point to a possible tendency of cartelised nature of operations carried on within the market system though it is not evident in any way and FCB efforts ensure the non-occurrence of such a phenomenon.

Phuentsholing and Samdrup Jongkhar largely transact in commodities such as potato, chilly, ginger, and fruits such as mandarin; procured by a handful of Indian traders. Little is transacted for supply within Bhutan it would seem. Two aspects that will govern the fate of these regulated markets and undermine its prospects in the future if not managed carefully are, (i) a market cess upto 6% charged by FCB from the buyer that is rather high, and (ii) transactions can be conducted directly between the buyer and seller outside the market thus effectively bypassing FCB markets progressively.

Vegetable trading at the market yard is visible largely by its absence attributable to, (i) lack of surplus on account of scale of production, (ii) uncompetitive cost against offering from across the border, and (iii) factor of perishability looking to the need to transport it to a location in India. However traders involved with existing commodities have indicated their interest to extend their trading portfolio to fresh vegetables subject to volumes being made available at a competitive cost. This has also been corroborated by traders visited along the Indian border as well. However logistics will have to improve alongside to make this happen.

To be fair, the above observation is based on a comparative scale considering the present trading volume of vegetables as compared to other existing commodities. As stated, vegetables have started to make their appearance in these markets and their volume should go up with increase in production. Table below indicates details of major vegetables and spices with details of area, production, and yield.

**Major vegetables and spices production in Bhutan (2011)**

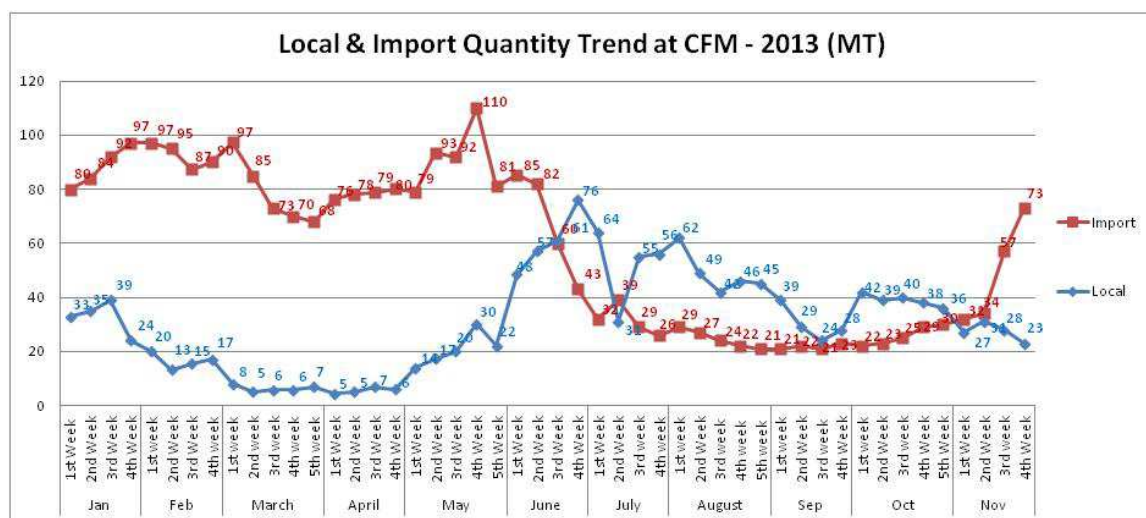
Crops	Area (Acres)	Production (MT)	Yield (Kg/Acre)
Potato	15,609	52,116	3,339
Asparagus	310	280	902
Cabbage	3,138	2,130	679
Broccoli	371	304	819
Cauliflower	3,138	2,130	679
Carrot	391	458	1,172
Tomato	440	559	1,269
Chili	11,079	8,121	733
Egg plant	344	255	740
Green leaves	2,990	2,510	839
Lady finger	34	27	792
Radish	2,840	4,865	1,713
Turnip	1,128	7,823	6,936
Peas	759	770	1,014
Beans	2,421	2,111	872

Mustard	3,101	2,344	756
Soybean	1,302	826	634
Dolay Chili	440	181	411
Garlic	2,927	584	199
Ginger	3,363	4,533	1,348
Onion bulb	782	285	364
Dal	1,010	579	573
Lentil	101	58	578
Mung bean	718	579	807
Rajma bean	1,124	873	776
Cucumber*		2,796	
Gourds*		327	
Pumpkin*		5,368	
Squash*		2,766	

\* Area is not necessarily applicable for cucurbit crops such as cucumber, gourds, pumpkin and squash. Therefore cells for area and yield have not been indicated.

Source: RNR Statistics 2012

The volume of market transactions vary dependent on local growing season with local supplies picking up around May-June and tapering off around October as indicated in the chart below that captures monthly arrivals at Thimpu Centenary market for the period April-December 2012. It is important to note that this is also the very time of the year when there is demand for Bhutan grown vegetables across the border in India, being off-season in those markets. As such this demand will have an upward pressure on prices of vegetables for the home market once production picks up and exports commence on a noticeable scale.



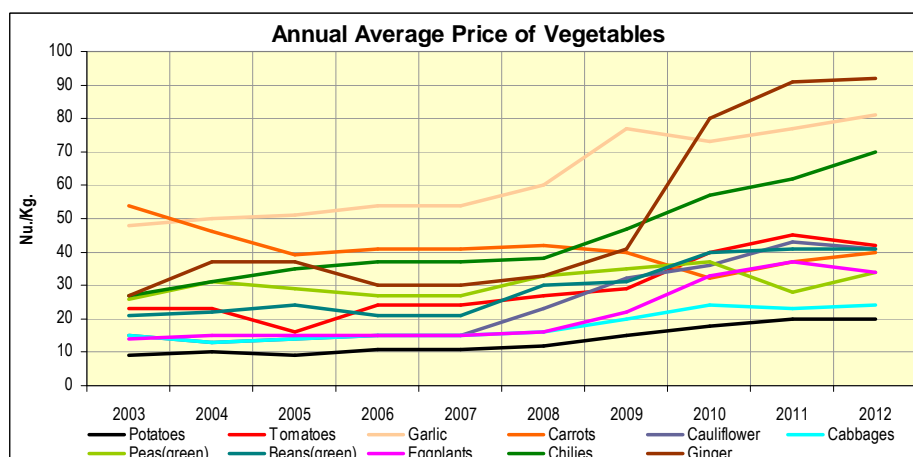
Source: Report on vegetable marketing and market situation for the 2nd week of Nov 2013

Understanding can also be developed by studying the two charts below, the first a numeral chart indicating price differential of vegetables around Thimpu as compared to those prevalent in West Bengal, India during mid-November, 2013. A note has to be made that prices reflect the start of growing season in India and an end to Bhutan's growing season. The second graph chart indicates the decadal price trend for important vegetables.

Commodity	CFM-Thimphu (Nu./Kg)	Other Markets in Thimphu (Nu./kg)	West. Bengal (Rs./kg)	Price difference (%) CFM & WB India
Potato	25	30	12	108
Tomato	85	90	47	81
S/ Green chilly	95	100	41	132
Egg plant	50	Nil	21	138
Onion	85	90	59	44
Cabbage	30	Nil	16	88
Cauliflower	60	65	16	275
Flat Beans	60	Nil	28	114

Garlic	160	Nil	42	281
Bitter gourd	55	55	27	104
Pumpkin	30	Nil	16	88
Cucumber	45	50	16	181
Bottle gourd	38	Nil	10	280

Source: Report on vegetable marketing and market situation for the 2nd week of Nov2013



Source: RNR Statistics 2012

All things considered, the market system currently functioning in Bhutan will facilitate the trading of vegetables through processes established with existing traders and related logistics arrangements offering themselves as a basis for future growth. It will also serve at building confidence for farmers from the point of fair price realisation. However volumes need to go up with involvement of more traders to increase the capitalisation, further leading to a more competitive pricing too that will help raise overall volumes traded. These markets will also need to be backed by regional markets that will serve as sub-wholesale points fed by collection centres at the lower tier to aggregate produce and move it to these markets.

### Markets across the Indian border

Once needs of Bhutan's internal consumption have been realised during the growing months of May to October, the Indian markets can offer potential for generation of cash for farmers involved with the VVCP-E programme. This is the season when India's weather conditions do not allow it to grow vegetables and it has to depend on "off season" supply as viewed from an Indian perspective.

During the months of November to April there is much local production in India and this is the time of the year when Bhutan does not have the needed climate to grow vegetables barring in a few low lying areas. Imports thus become cheaper from across the border. As such this can function as a complimentary arrangement as long as prices are affordable. This is also the time when market volumes dip in India since most houses grow their own vegetables and need to procure little from the market so Bhutan serves as a good market. This a pointer to lowering cost of production within Bhutan and upscaling it's production.

The 6 month "Indian off-season" period during May to October would be enough to help Bhutan chalk up a reasonable turnover because it matches the vegetable growing season in Bhutan, and prices shoot up in Indian markets that would allow an entry even at a higher cost of production. However as discussed later it will be more prudent to first scale up production and build a supply line to first service needs of the Bhutanese market system that will help Bhutanese farmers develop a better understanding about dealing with markets, thus helping develop confidence to address needs of the more enabled Indian market.

Presented below are features of Indian markets, followed by details of markets visited:

- The markets in Assam and West Bengal states of India are largely unregulated and will thus pose no entry barriers to vegetables from Bhutan when supplied. Although the Assam Agricultural Produce Market Act has been enacted in 1972 and West Bengal too has enacted an Act, these are largely to facilitate collection of 1% cess paid by the buyer and manage the market management structure. Even though the New APMC Act has been passed, the rules are yet to be formulated.



o Regardless of their look of unorganised markets, markets on the Indian side run like a well oiled machinery with arbitrage and opportunities managed without delay, strain, or additional cost. What this means is that when demand is high in this region, goods come from as far as Jalandhar, Agra, Nashik, Indore, Kanpur, and Patna. At the same time vegetable consignments reach the above markets and even New Delhi from places like Barpeta and Guwahati when prices offered at distant locations are remunerative.

o Most large traders in locations such as Barpeta and Guwahati have their own agents placed at distant growing centres who procure local produce, despatch, and manage the payment system on behalf of their principals who have appointed them. It can be presumed that once production picks up in eastern Bhutan similar agents will mushroom here as well.

o The trucking and logistics sector works closely to meet needs of vegetable traders and it requires no special effort to organise transport & loading/unloading facilities. Rates work on a competitive basis with choice available avoiding tendency towards exploitation.

o Considering markets from Guwahati to Shillong will be prospective markets (see map), the real focus will come on markets between Rangia and Barpeta Road. This is being said considering that markets closer to Samdrup Jongkhar such as Daranga, Kumarikata, and Tamulpur though functioning in initial stages as supply points for vegetable from Bhutan are small and will start functioning eventually as agents on behalf of bigger traders operating between Guwahati and Barpeta, other than procuring for small consumption for local retail sale.

o Off-season vegetables that flood the Guwahati market during May to October come from Shillong, Kharupetia and Nagaon, large off-

season growing areas forming part of its regular off-season supply chain route. Markets such as Siliguri, Falakata, and Dhuburi meet their demand from Darjeeling, another large off season growing hub at a short distance towards north west of these markets. As against this the middle markets from Rangia to Barpeta Road will give Bhutanese vegetables an advantage from a distance perspective and hence be more attractive since they can not be serviced as effectively by Shillong or Darjeeling growers. Among many other reasons the sheer volume of markets between Rangia and Barpeta Road is another good reason to focus on – to a scale of 5 times or more as compared to Guwahati market. Also since this area is represented by bigger and smaller markets (and hence bigger and smaller traders) VVCP-E could scale up its growth plans starting with the smaller traders and later evoking the interest of larger traders once our supply line gains volume and is secured.

Given the background shared above the following section captures aspects of important markets from Guwahati to Falakata that are of relevance to VVCP-E's plans.

### Guwahati

While the Guwahati market seems big and offers potential, in the context of VVCP-E it needs to be understood for what it offers. Many traders when spoken to on the Samdrup Jongkhar-Barpeta Road corridor mentioned that Guwahati was not a market they would go to unless it in itself offered a good price for its own captive needs. Entry into Guwahati market will be feasible only during the months of May to October and will be governed largely by the competitiveness of VVCP supply to match prices of supply from Shillong, Kharupetia, and Nagaon.

In all 5 markets exist in Guwahati, though in the current context only the first two would be relevant for the VVCP-E programme:

### Pamohi (Garchuk)

Contact Person: Mr. Ganesh Deka – ASAMB Market Supervision Staff, Cell: 09085961058

This market is located on the Shillong-Guwahati bypass road, and is one where vegetables are traded throughout the year at an average of 45 to 90 MT daily based on season. The Garchuk market is one of 24 regulated markets managed by the Assam State Agricultural Marketing Board (ASAMB). The market seems like a large village market and a new building is being constructed. Though attempts are being made to establish a large Terminal Market, land availability is posing a problem. In the absence of this and lack of separation of wholesale and retail markets, as stated by ASAMB officials, it is not difficult to guess that there is limited potential for such markets to grow.



***The Garchuk market as it exists today (left) and the new building under construction (above) likely to take another 2-3 years***

Vegetables arrive in two lots during the day. The first lot starts to arrive from 10 pm on the previous night to 5:30 am next morning and this lot is transacted between 6 am and 11 am in the morning. The next lot arrives between 12 noon and 2 pm that is usually sold out by 4 pm. There is no auction system and transactions are carried out on negotiation basis between the buyer and the seller.

November to April is considered the local growing season when locally produced vegetables constitute bulk of the sale at fairly low rates on account of the production volume. This is also the season when most households are able to grow their own vegetables and hence the need to buy from the market reduces, reflected through a dropped turnover of the market. The season from May to November gets termed as "off-season" when vegetable is procured from external locations, largely Meghalaya, and also Kharupetia and Nagaon. This is the real potential season that offers Bhutanese vegetables the opportunity to participate in this Indian market. Similarly during

November to April when the plains grow vegetables in abundance, they become suppliers to the off season production points located in cooler geographical areas.

During off-season nearly 70% supply comes from Meghalaya State, and 30% from regions like Kharupetia, Nagaon, and Barpeta Road, with little supply coming from West Bengal. Given the distance and time (and possibly the cost too) taken to reach Guwahati from Samdrup Jongkhar being the same or lesser than from Meghalaya there is no reason why Bhutanese farmers shouldn't hold hope of competing with the 3 existing regions. As has already been indicated there are no other entry barriers as such that would apply to Bhutanese vegetable commodity.

The table below gives an indication of the daily offtake of various vegetables at Garchuk on a season/off season basis:

Vegetable	Sale/Day (Qtl)	Vegetable	Sale/Day (Qtl)
Cabbage	60	Red Radish	25
Cauliflower	60	White Radish	60-80
Tomato	15-50	Okra	30-40
Beans	10	Bottle Gourd (Louka)	15-25
Squash	10	Cucumber	40-50
Pumpkin	20	Brinjal	30-40
Capsicum	10-15	Green Chilly	30-40
Carrot	15-20	Leafy Saag	7-10

Other than above vegetables, the following are sold as commodities also sourced extensively from external markets:

Commodity	Sale in season (Qtl)	Sale off season (Qtl)	Major external source
Potato	300	600	Jalandhar
Onion	100	300	Nashik
Garlic	60	150	Indore

The table below gives a range of prices for various vegetables as informed by the ASAMB Market Inspector at the Garchuk Market location:

Vegetable	Season Price (Rs./kg)	Off Season Price (Rs./kg)	Vegetable	Season Price (Rs./kg)	Off Season Price (Rs./kg)
Potato	7-8	20-25	Tomato	2-4	30-40
Onion	12-15	20-30	Cucumber	8-12	8-12
Green Chilly	10-15	30-40	Brinjal	5-8	13-20
Ginger	50-55	70-90	Carrot	8-12	40-50
Cabbage	4-5	12-15	Okra	8-12	20-25
Cauliflower	6-8	30-40	Capsicum	20-40	60-70
French Bean	15-25	30-40	Bottle Gourd	6-10	10-15
Squash	8-10	15-20	Bitter Gourd	8-12	30-40
Pumpkin	8-10	10-16	Green Peas	10-12	70-80
Radish	4-5	10-12	Leafy Veggies	10-12	15-20

Freight rates applicable currently were indicated as below:

	9/10 MT Truck	6 MT Canter	2 MT Pickup
From Shillong	Rs. 10,000	Rs. 6,000	Rs. 2,000
From Kharupetia	Rs. 8,000	Rs. 5,000	Rs. 3,000
From Daranga	Rs. 7,000	Rs. 6,000	Rs. 3,500

As can be seen, the Garchuk market is a thriving hub for vegetable marketing and can be tapped if competitive conditions can be met. However as shared elsewhere, other markets going westwards may be more suited for Bhutanese supply since this Guwahati market has a strong and traditional supply line from other "off season" growing areas such as Shillong, Kharupetia, and Nagaon.

### Fancy Bazar

Fancy Bazar forms part of the Paltan Bazar area that is otherwise a thriving area frequented by the upper and middle class residents in the middle of Guwahati town. The market is dotted more with fruit sellers while a few vegetable sellers are also seen sitting on the roadside. This market can not be termed as a wholesale market and bears a character of a market where good quality goods are sold for customers willing to pay a higher cost for fruits and vegetables, and not willing to shop in the confines of distant Garchuk that is also very crowded and not pleasant to shop in for an upper crust Guwahati customer. Rates here obviously are higher with the vegetables and fruits well displayed and bearing a look of higher quality.



***A view of the Fancy Bazar fruit market (left) and vegetable vendors (right)***

### Machkhowa

This used to be the earlier vegetable market located within the city but this has been moved out to Garchuk. There are just a few vegetable vendors (see picture on right) who can be found sitting on the roadside to sell to passers by. Many of the traders who used to operate from here too have moved or are moving to Garchuk given the movement of operations there. As such it no longer holds any value as a market of consequence, and in fact seems a very small wayside market from the retail point of view as well.



### Adabari



Located in the north western part of Guwahati, this too is a small street market (picture on left) largely for fruits retail and can not be considered a wholesale trade location by any measure.

### Organic Market

Located close to the 5<sup>th</sup> mile location, this newly created market is planned to be a big hub for organic vegetables but has yet to take shape. It seems too ambitious a project in the current day looking to the size planned on one hand, yet the market preference for organic food (given the price differential and lack of authenticity) on the other. Also its current dealing norm of paying later on consignment basis will definitely not work well for perishable commodities such as vegetables. Most products are not certified but bear the label of being organically produced, though talks are on with OneCert in Gujarat.

The market has been built by ASAMB and is to be managed in collaboration with Neog Agro & Alliance Ltd., whose Chairperson Mr. Kalpajyoti Neog has a background in the tea and fish business. A formal agreement is yet to be signed between the two institutions which is another reason why the market is largely empty. The group has roughly 200 acres of land that it wishes to commit to production of organic produce and it is hoped things will become operational by mid 2014.



***A view of the proposed auction area on the ground floor (left) and the organic vegetable section on the first floor (right)***

The three storeyed market would have a covered area of approx. 30,000 sft. and an open area of 7,000 sft., the latter to be used for auctioning purposes. While many products were on display there were little customer footfalls and even lesser sale. This was largely attributed to lack of consciousness even though rates were competitive on account of produce sourced directly from the growers without the middle channels adding their margin. However to be fair to the management, a sale of Rs. 25,000/day was reported on weekdays and Rs. 50,000 on Sundays. Other than the market 2 cafeterias were also seen, and other than a laboratory, a departmental store, grocery store and an entertainment section was being planned to make this a complete family offering for an evening out. A large section has been devoted for fresh fish and there is ample space to park cars.

### **Markets Outside Guwahati Towards Siliguri**

As has been shared before, we feel that focussing on markets south of Samdrup Jongkhar such as Daranga, Kumarikata, Tamulpur, and Rangia to begin with followed by moving westwards to Barpeta Road would seem an appropriate strategy as and when production scales up competitively and logistics are smoothly positioned. Within this would fall markets such as Rangia (a junction between roads going east to Guwahati and west to Barpeta Road) and also a railway junction, Nalabari, and Sarupeta; finally ending at Barpeta Road that on its own can take care of upscaled produce from Bhutan for many years to come. Beyond Barpeta Road, transportation may prove expensive, moreover markets like Falakata, Dhupguri, and Siliguri can be selectively supplied to but largely depend on vegetables from Darjeeling and Sikkim for their needs. A brief description of the Indian markets is shared below.

**Daranga, Kumarikata, and Tamulpur:** These are smaller markets on the road from Samdrup Jongkhar to Rangia. Daranga is in fact an extension of Samdrup Jongkhar town on the Indian side. While many existing traders at Samdrup Jongkhar hail from these locations we need to be able to differentiate between a market and a trader that hails from that location, since the latter is not representative of a market but an individual buyer from that region acting on behalf of and as a supplier to other markets.



***A view of the Tamulpur and Kumarikata markets in an inactive state since transactions are largely done on two identified days***

These three locations given the existing relationship through traders based there would form the first step of scaled up procurement through the Samdrup Jongkhar market, to meet needs of local retail or supply to bigger traders in larger markets. As in other markets of Assam and West Bengal, two specific days every week are earmarked as days of upscaled stocking and trading and efforts must be made at our end to scale up supply to Samdrup Jongkhar market on the previous day or offer produce early in the morning to finish by 6 am so that the goods can be ferried across to meet needs of upscaled market demand on those specific days.

### Rangia

This town assumes importance not so much only for the market it has but on three other counts:



- 1) Rangia is a railway junction and this makes it a large centre for commerce to flourish. In a manner of speaking it could also function as a logistical hub for smaller markets such as Daranga, Kumarikata, and Tamulpur located to its north on the way from Bhutan.
- 2) 5-6 large traders are based at Rangia and in days ahead their importance will grow taking into consideration the aspect mentioned in point below. A large trader (Mr. Prakash Jaiswal) was spoken to who was currently dealing in commodities such as potato, onion, and garlic that he was sourcing from Maharashtra, Madhya Pradesh, and Uttar Pradesh and supplying to far way locations such as Arunachal Pradesh. The young and resourceful trader indicated that it was a cartel of 15-20 small traders who dominated the Samdrup Jongkhar market and given the size of the current market, traders like him had little interest to participate in its opportunity. On the other hand he was supplying goods to Arunachal Pradesh and was looking forward to the opening of the Tawang road through Bhutan. He also stated that Guwahati was not an important market for this side of Assam and it made more sense to pursue markets westwards towards Barpeta Road. He also expressed his keenness to link up to the VVCP-E programme once the stage of scale and market norm compliance was reached.
- 3) It came to be known that the Government of India has sanctioned a food processing park close to Rangia. Once this food park stands commissioned Rangia will assume importance for commodity and vegetable supply dependent on the mix of industries to be located within the food park. One large investor, Amalgamated Plantations of the Tata group<sup>8</sup> is also considering establishing a unit within the food park.

### Nalabari

Contact Person: Mr. Golog Burman, Wholesale Trader, Mobile No. 09864147902

The Nalabari market has a rough offtake of 300 qtls during off season time and 150 qtls during the home growing season of December to May. The large traders source their off season supplies directly from Shillong and Kharupetia virtually on a daily basis in the peak of supply time and on alternate days during the rising and waning phase. There are 4-5 large vegetable traders who further supply to wholesalers in a 10-12 kms radius for needs of villages around them. The market functions all 7 days in a week.

The freight rate from Shillong was reported to be as below:

5 MT Canter: Rs. 6,000/load

3 MT Pickup: Rs. 4,500-5,000/load

A total cost of Rs. 4,000 would need to be provisioned for loading/unloading.

<sup>8</sup> They have indicated an interest to collaborate and the consultant has requested for a letter seeking their introduction, intent, and possible collaborative arrangements for cultivation and supply of crops of mutual relevance  
Contact Person: Mr. Bhupal Neog, Cell No.: +91-94357-06048

Wholesale rates of vegetables were indicated to be as below:

Vegetable	Rate/Qtl (Rs.)		Vegetable	Rate/Qtl (Rs.)
Cabbage	1,600		Red Radish	1,000
Cauliflower	2,200		White Radish	1,000
Tomato	4,000		Potato	3,000
Beans	4,000		Cucumber	1,000-3,000
Squash	1,600		Brinjal	2,200
Pumpkin	1,600		Green Chilly	4,000
Carrot	5,000		Thick Green Chilly	8,000
Green Peas	700		Spinach, mint, coriander	Local supply

### Patshala

Contact Person: Mr. Nava Kumar Das, Wholesale Trader, Mobile No. 07399857145



Patshala has a very small market largely catering to needs of the local retail needs. The trader interviewed was one of the larger traders in town who sold 10-12 qtls/day stepping up to a turnover of 20 qtls on two special days (Sat/Tues). In all, the market had 90-100 retailers and a turnover of 200 qtls per day during season time (Dec-Apr) and 100 qtls during off season (May-Nov). Most vegetable vendors sourced vegetables

from Barpeta Road, largely through 3 wheeler and 4 wheeler tempos and the off season supplies came from Shillong. A one MT tempo from Barpeta Road to Patshala cost between Rs. 700-800. Anando Bazar on the road to Nganglam was another point of supply from where a one MT tempo cost Rs. 500. It was also reported that some of the Shillong supply found its way into Bhutan markets such as Nganglam to the tune of 3-4 qtls daily.

### Barpeta Road

Barpeta Road (not to be confused with Barpeta Town) is a huge market for vegetables, far larger than the Guwahati market and one that shows signs of wholesale trade to a higher degree. This qualifies not only for vegetables, but also for fruits, and a commodity such as bamboo. This is being mentioned to stress the point that Barpeta Road is a location where trade is pursued as a primary activity and on account of this it functions as a trading centre at a large scale, one that also has a vibrant Commission Agent's Association. Like Guwahati this too is a market managed by ASAMB though the senior officials sit at Howly at a distance of 10 kms from Barpeta Road.



#### ***A rake of bamboo being loaded for despatch***

carrot, cowpea, cucumber, lady's finger, potato, pointed gourd, pumpkin, radish, ridge gourd, snake gourd, sponge gourd, and squash.

The tables below from a dated report<sup>9</sup> give an idea of the production of key vegetables and their area coverage in the Barpeta Road region. Even though the report is a few years old it should give

<sup>9</sup> Study conducted by Centre for Microfinance and Livelihoods, Guwahati, 2010

us a fair idea of the scale of vegetable production that we will need to keep in mind if we have to engage with this market in the future. It definitely points to why Barpeta Road has become a major supplier to locations like Guwahati and even New Delhi. It will also be interesting to study the level of vegetable production per hectare of land area that is not possible without use of hybrid seeds, chemical fertilisers, and pesticides; though attempts are made to use bio-pesticides and the like.

#### Production of key vegetables in MT

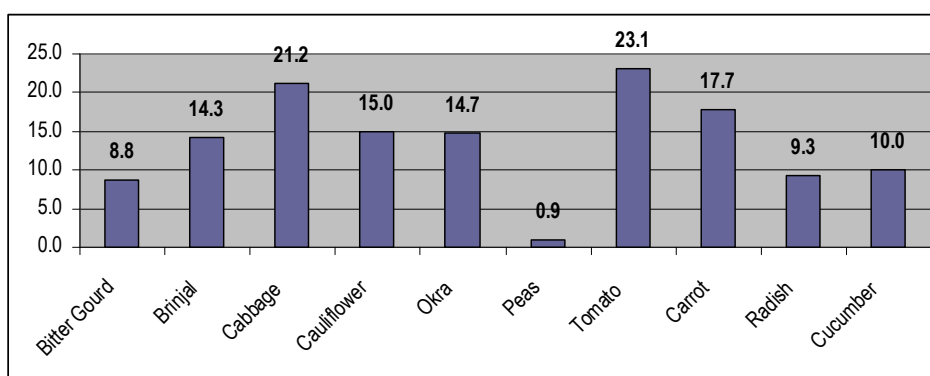
	Bitter Gourd	Brinjal	Cabbage	Cauliflower	Okra	Peas	Tomato	Carrot	Radish	Cucumber	Total Prod. (MT)
2007-08	6,333	5,753	87,358	1842 4	7,292	882	19,310	5,232	4,084	3,268	157,936
2006-07	6,333	5,253	87,358	18,424	7,292	882	18,156	5,232	4,084	3,068	156,082
2005-06	6,333	5,266	87,337	36,988	13,156	1,878	18,526	10,447	8,287	6,067	244,634

#### Area coverage of key vegetables in Ha.

	Bitter Gourd	Brinjal	Cabbage	Cauliflower	Okra	Peas	Tomato	Carrot	Radish	Cucumber	Total prod. area (Ha.)
2007-08	720	403	4,111	1,230	496	1,001	836	295	441	326	9,859
2006-07	720	403	4,111	1,230	496	1,001	786	295	441	306	9,789
2005-06	730	404	4,110	2,470	895	2,135	785	589	895	605	13,618

Looking to the yield in the chart below (2007-08) an explanation can be offered why Barpeta is able to competitively supply to various markets, and why the selling price dips very low during season time given its abundant production. It also offers a reasoning to develop a reverse supply chain into Bhutan during the months of November to April if prices dip low in a market such as Barpeta. Given the higher value got for off season supplies from Bhutan and the cheaper import of summer vegetables the net flow of foreign currency should be in favour of Bhutan if volumes match.

#### Yield (MT/Ha.) of major vegetables in Barpeta region



A rough estimate of market sale as shared by ASAMB functionaries varied from 500 to 1,000 MT per day though traders indicated that this figure was substantially higher. Just as in Guwahati transactions are done through negotiations and not auction. The market is open all 7 days in a week commencing sale at 5 AM with Monday and Thursday being the higher volume days. Trucks arrive early and are kept waiting till market stocks exhaust when they are brought in to the market to offload fresh stocks and this goes on throughout the day.



**Two views of the busy Barpeta Road market**

A meeting was held with Mr. Kader Ali (mobile no. 09435123728) of R.K. Traders who was one of many large traders operating from within the vegetable market. Mr. Ali was quite candid in stating that market was not a problem since Barpeta Road was integrated to all national markets, however prices had to be competitive and the vegetables needed to be of a good quality and delivered in a graded and sorted state if a good price was to be expected. Based on its high demand, vegetables such as tomato were being sourced from faraway Arunachal Pradesh and as such Bhutan could easily compete during the period May-October if it could deliver to market expectations. A passing remark made was that around 100 trucks of 20MT vegetables could arrive on a high demand day. This needs to be viewed against the backdrop of the area being a disturbed area in the past, yet thriving the way it does today.

The table below gives an indication of prevalent rates at the time of the study and it was learnt that the difference in wholesale and retail rate was a markup of around 35% as it took into account all factors of forward sale including wastage.

Vegetable	Rate/Qtl (Rs.)	Vegetable	Rate/Qtl (Rs.)
Cabbage	2,200	Carrot	4,000
Cauliflower	2,200	White Radish	600
Tomato	2,100	Potato	2,000
Beans	Poor arrivals	Cucumber	600
Squash	Poor arrivals	Brinjal	1,500
Pumpkin	Poor arrivals	Green Chilly	3,500

### **Bongaigaon**

Contact Person: Mr. Hari Das, Vegetable Dealer – Consignment Basis, Mobile No. 09954014408

Bongaigaon is a very small market, in a manner of speaking even defying the size of the town. A very small market area has been created largely to cater to needs of the small town and this too exhausts its stocks by around lunch time. The trader when spoken indicated he had little work to do when season of local vegetable production started. During market activity days vegetables were ferried using cycles and 3-wheeler autos. Sometimes vegetables were brought from the Garo Hill area in Meghalaya from where a 2MT pickup truck would charge Rs. 2,000 for the lot including loading and unloading, while a 6MT Canter would cost Rs. 7,000 to transport.

As in other locations it was noticed that market cess was charged at a fixed rate of Rs. 10-15/jute bag and the growers tended to stuff these bags upto a weight of 70 kgs damaging the vegetables. At the retail level a cess of Rs. 1/kg. was collected that he said was high. However Hari Das emphatically stated that he only procured on consignment basis and gave money to the farmer on

sale taking place. Considering he was one of the larger traders and one who did not believe in committing his own money shows the potential of the market.

### Kokrajhar

On account of shortage of time and also the disturbed condition in this region the consultant had to skip visiting this town. Looking to the general state of law and order this town will not be functioning as a marketplace though may have some retail potential having been designated as the headquarters of the Bodoland movement.

### Falakata

While Falakata within West Bengal state was being perceived as an important market by the RAMCO SNV team, in reality it is not so – something even pointed out by the functionaries of ASAMB at Guwahati. As an indication, when discussions were held with bigger traders within Falakata even they pointed to Dhupguri at a distance of 25 kms from Falakata as being a market twice the size of Falakata. To be candid, the name of a market such as Dhupguri was not even known before coming to Falakata. To add to it the traders mentioned that there were many more markets of that size around the region.

As stated earlier Falakata and Dhupguri's off season requirement is met by producing areas of Siliguri, Darjeeling and Sikkim; all located less than 200 kms away. These take a direct route to Falakata/Dhupguri and not necessarily via Siliguri that in itself is a huge market. The traders reported very little movement of vegetables even from Barpeta Road to this market that is otherwise a huge supply point. This points to the local dynamics at work and bring home the point that Falakata and markets as far west as it has little relevance to needs of the VVCP-E program, particularly at this stage. One could safely suggest that the progression of Bhutan supply should move in the Daranga -> Kumarikata -> Tamulpur -> Rangia -> Nalbari -> Barpeta Road corridor since it will not be able to compete beyond that point. However if western Bhutan could cater to volume supply of vegetables it could use Siliguri, Falakata, and Dhupguri markets as potential markets.

The Falakata market is a medium sized market open 365 days a year and is managed by the Zila Parishad<sup>10</sup> that auctioned it to a bidder for an annual tender fee of Rs. 3,95,000. The bidder then recovers cess from the vegetable sellers and has to be relatively flexible while conducting this act. A new market was being planned in a better building at a distance of 5 kms from the present market and this seemed to irk the traders in terms of re-establishing themselves. Tuesdays and Fridays are the bigger days when sale could touch around 400 MT/day whereas on other days it stood around 60/70 MT. Just as other locations the off season months was from May-Oct but with Falakata largely being a consumptive market and not a trading market the sales tended to drop to 25% of the seasonal sales largely on account of higher prices prevalent for vegetables procured from beyond the region.



***The Falakata market shed as it exists today (left) and some of the traders who joined discussions (above)***

The market starts at 4 am and most deals stand transacted by 9 am. While the current Falakata market is not regulated, Dhupguri and Mynaguri (the second has not taken off well) at a distance of 30 kms are regulated. However with the coming up of the new market 5 kms away from the present location, even

<sup>10</sup> A sub-district administrative unit

Falakata will become a regulated market. However as has earlier shared this will largely have an implication on cess collection, management, and maintenance; not much by way of operations.

The table below gives a comparative price scenario during the season and off-season phases:

Vegetable	Season Price (Rs./kg)	Off Season Price (Rs./kg)	Vegetable	Season Price (Rs./kg)	Off Season Price (Rs./kg)
Potato	8-12	16-22	Squash	8-15	8-15
Cabbage	8-20	No demand on account of high price*	Chilly	12-50	12-50
Cauliflower	10-70		Cucumber	8-12	10-25
Beans	10-20		Brinjal	20-25	20-25
Radish	8-15	8-15	Tomato	15-40	25-40
Carrot	10-40	30-35	Peas	15-25	60-80

\* This can be viewed as an opportunity should Bhutan be able to produce vegetables at a competitive rate

Falakata is a supplier to Bhutan via Phuentsholing and Gelephu and faraway locations such as Burdwan, Burnpur, and even Kanpur for off season vegetables. Other than vegetables even groceries are supplied to Bhutan, while oranges are imported for 2 months in a year and potatoes for 1 month from Bhutan. It also came to be known that a 2.5 MT pickup truck would charge Rs. 6,500 to transport vegetables from Darjeeling whereas a 6 MT Canter would charge Rs. 9,500 for the consignment.

The following were the traders with the last trader mentioned being a young enthusiastic trader to develop future links with:

Mr. Kailash Shah                      Mobile No. 07872832570

Mr. Rana Dey                              Mobile No. 09733371995

Mr. Jayguru Bhandar              Mobile No. 09832430466

Mr. Vivek Sharma                      Mobile No. 07679304726                      Email: [viveksharma8813@gmail.com](mailto:viveksharma8813@gmail.com)

The last trader is a young and enthusiastic trader and could be the first point of contact. On the other hand Mr. Kailash Shah is an established trader.

## Implementation Strategy Plan

## IMPLEMENTATION STRATEGY PLAN

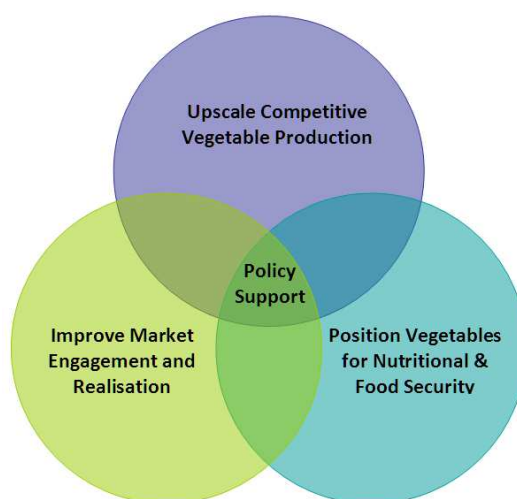
As has been discussed on many an occasion the scale of production is very low to consider the activity viable from a market perspective at this point of time, let alone have it compete within the markets of Bhutan. Efforts thus need to be made to raising the level of production to enable it to become of interest to the trading system first within Bhutan, later followed by India. This will also help the producers realise some tangible benefits from an activity they have experienced and can be managed by them. However this needs to be done in a manner that will allow local produce to compete with goods imported from India. This section sets out an implementation strategy for the VVCP-E programme to serve as a guiding light to efforts of RAMCO and SNV in days ahead. This section deals with points in an objective manner acknowledging ground realities and looking to the level of effort already positioned, research and studies carried out, and expectations set.

The strategy for growth is suggested to be built on four pillars that will assume importance over time to present themselves clearly as the way forward for all stakeholders to relate to. Of the four, VVCP-E would work on pillars 1 and 2 as a core effort, while initiating and facilitating the pursuit of pillars 3 & 4. Once plans have been debated and final contours are agreed upon, aspects of timeline and budgets could then be detailed.

The four pillars of growth suggested are:

- 1) **Upscaling Competitive Vegetable Production** – efforts under this will need to look at increasing participation in the VVCP-E programme by increasing geographical coverage, adding to number of participating farmers, and improving yield from existing land available, also considering inter-cropping options for improved viability.
- 2) **Improving Market Engagement and Realisation** – efforts within this will focus on building an effective aggregation system, improving supply chain logistics, raising volumes of existing markets through increased production and better tuning to market needs, and accessing newer markets and traders across the border.
- 3) **Positioning Vegetables for Nutritional & Food Security** – this pillar will focus on building on awareness for improved vegetable consumption from a nutrition and economic viewpoint. Efforts will be directed at linking to complementing efforts pursued in tandem with health and nutrition related institutions.
- 4) **Strengthening Institutional & Policy Support** – this will function as the central pillar focusing on creating the underlying environment to add strength to planned efforts helping make them a reality. It will also focus on aspects of inter-ministerial co-ordination and tying in of efforts to the five year plan and MDG goals adopted by Bhutan.

As can be well understood these pillars will not work in isolation but will dovetail into and draw from each other. However to facilitate operational handling and management of activities and budgets



these may form as good verticals to focus efforts through. A mention also needs to be made that all these pillars will function as organic extensions from past efforts acknowledging the learning from successes and failures experienced.

## Upscaling Competitive Vegetable Production

This will be one of two core efforts that will drive future RAMCO and SNV effort, the other being Improving Market Engagement and Realisation. It will not be difficult to visualise the importance of focussed steps mentioned below given expectations in line with national priorities:

- Make production of vegetables a more viable, affordable, and remunerative option for benefit of cultivators and consuming families within Bhutan
- Extend needed support to the upscaling effort through investing in capacity building, applying newer techniques, encouraging higher rate of cropping, making inputs available at an affordable cost and on time
- Increase yield and coverage area for vegetable cultivation pursued by existing farmers and increase farmer coverage to additional Geogs
- Alongside pursue efforts to raise volumes and yield, keep on constantly working closely with the research system to prepare vegetable seed availability for newer crops and varieties to address time and preference based needs of markets
- Encourage production and cultivation of naturally organic vegetables within Bhutan for domestic needs identified from a nutritional perspective; and for external markets based on seasonal opportunity based planning

### INCREASING PRODUCTIVITY AND COVERAGE AREA

Having established a proof of concept through efforts initiated in six Dzongkhags there is a need to upscale involvement of farmers in the vegetable cultivation program under VVCP-E. The primary focus of this effort will thus be to elevate vegetable growing, (i) for existing farmers from a side activity to an activity with a higher time, labour, & land commitment, and (ii) to induct more farmers to try it as an activity as done by fellow farmers by sharing success experienced by the first wave of farmers. Increasing coverage in terms of induction of newer Geogs and more farmers will need higher budgetary allocations that will need to be addressed first to enable the roll out of such a plan.

This upscaled cultivation drive will need to work through a macro plan covering the six eastern Dzongkhags of Bhutan that acknowledges (i) market needs in terms of location and seasonality drawn also from an analysis of potential markets, (ii) low land/mid-hill growing strategies ensuring a wider growing season between the two options, (iii) aggregation and supply chain logistics considerations, and (iv) factors governing market demand reflected through its pricing, and the months that constitute its season.

The following approach is recommended to be adopted given needs to address above needs:

- **Increase area coverage within a household's overall land holding<sup>11</sup>** – applicable to those farmers already inducted into the VVCP-E programme. This has been substantiated as intent by community farmers based on returns experienced by them with their pilot efforts. However caution must be exercised on three counts:
  - Cash flow planning must be carried out since increase in land area is bound to create an additional demand on capital and revenue expenditure, both at the end of farmers and the programme
  - Human time allocation too will need to be thought through considering that vegetable cultivation is a labour intensive activity and families should not overstretch themselves and hence compromise on cultivation quality. Work management practices may need to undergo a change to help cope better
  - Finally, care needs to be taken to ensure that allocation of land between need for food security and cash crop be maintained as a safe margin and isn't compromised

<sup>11</sup> It was learnt that most members preferred to manage 33 decimal land and were keen to scale it up. On another count a mention was made that if a family could cultivate one acre of land, it could make a family of 10 food secure for the whole year

One approach that could be adopted is the formulation of an Upscaling Package offered to top 5 performing farmers in a group. This could be in the form of seeds and inputs such as sprinklers, drip system, crates, etc; that will ensure deployment by a person with a good track record and will also serve as an example for others to emulate. The same kit could otherwise be made available through the OSFS for sale to vegetable farmers.

- **Increase number of families participating within a village system** – this may currently be governed by program mandate and would also draw its constraint from budgetary allocation. However if both these needs can be addressed, the induction could be carried out in phases by preferring those closer to a collection route, or a high potential growing area, or one that is under the influence of a well performing group. Efforts could include as many willing participants as possible since this will reflect through cheaper aggregation and logistics cost.

Once a new farmer has been included in the program a mentor linkage system could be created with an existing performer close to the new inductee's location while taking them through the capacity building stages as has worked in the past. The mentor will largely bear the responsibility of helping the new inductee through their initial steps and could benefit from a margin on sale of produce he has helped nurture by functioning as an aggregator.

- **Increase number of Geogs covered within a Dzongkhag** – this would necessitate a larger budgetary outlay from the government but will ensure wider participation for raised volumes. An analysis of plans and budgets will have to be done to include the Dzongkhag departmental plan as also those formulated under VPMP. RAMCO could be contracted by the two plan implementers to induct a larger number of families into vegetable production, either through VVCP-E or through their own programme. Even if the act of inducting new farmer groups has to be handled departmentally, for purposes of collection and marketing they could fit into the VVCP-E effort on a pre-decided mode of engagement, particularly for aggregation and marketing planning.

## UPSCALING PRODUCTION

Efforts at upscaling needs to be viewed as going beyond farmers and fields trying to improve on their output. Points below help capture related efforts that too will need to “kick in” to bring success:

- **Focus on few crops** – the temptation to spread efforts too thin needs to be avoided. A list of focused vegetables has already been drawn up under VVCP-E programme and support should be prioritised for such produce. This strategy will not only help build volumes but also enhance trust and reputation with the trading fraternity helping build a strong supply line for the chosen produce in which VVCP-E participants have an edge. Once developed, other vegetables too can ride the supply line and find growth. This could be structured by favouring support to items decided to focus on with market preference driving the choice.
- **Make growing clusters and strengthen selectively** – just as above, there is a need to prioritise on growing areas and building volumes at selective points. This will allow for focused strengthening of growing areas and reflect through strengthened collection points offering optimised logistics. Such locations could typically be those where a highly progressive farmer is noticed with a willing community keen to follow in his/her footsteps. The emergence of such clusters will encourage other potential villages to be linked to them, to link and upscale production at their end too.
- **Collective marketing as against individual marketing pursued currently** – this will need to be introduced early as an operational culture and could be one of the main points of resistance to upscaling the vegetable production programme. Currently farmers are insistent on accompanying their produce to the market on an individual basis to the extent possible. This is in fact a precious waste of human resource and such cultural practices act as a baggage that need to be addressed early so as to enable a systemic change to be brought about in their thinking. To address this need, two things will have to be pursued, (i) thinking will have to be changed outlining the wastage of time & cost, and its impediment to growth when farmers travel individually to markets, and (ii) systems and processes will need to be developed and positioned that offer confidence to the farming community on aspects of produce acceptance, responsibility while in transit, and fair compensation at the

end of collective sale. One way to inculcate this could be by offering a price bonus for a short period of time incentivising this shift in practice.

- **Monitor input and crop management closely** – while it is good to provide inputs and extension support, this point seeks to emphasise the need to continually monitor the upscaling effort to work closely with farmer groups. Looking to limited resources and their optimal utilisation an innovative mechanism will need to be developed beyond formal structures that have limited reach. The aggregator/collector who has a stake in timely and quality delivery of produce could be one such avenue that can be explored other than village level para-extension youth who can be trained to perform this task for an incentive fee.
- **Introduce trader link early and then link to direct supply** – finally it is important to keep the trader involved with realities and constraints of supply and to that extent expose them to operational aspects. This will also help scale up efforts since once the trader develops confidence in the supply line they may be in a position to contract with large buyers beyond the conventional market system. As a separate point, bringing the trader closer to the grower will improve the bargaining capacity of the growers and also give them confidence that they are realising a fair value for their produce.
- **New crops and varieties as preferred by the market** – while it may have been mentioned in passing, a specific mention is being made now pointing to the possibility of growing vegetables or varieties not endemic to the region. This could be pursued based on market demand and the possibility to match its growing needs from a geographical and seasonal point of view if found viable to produce. Beyond this the activity of vegetable seed production may offer potential and could be explored for the benefit of better performing farmers who could meet the need for supply of good quality vegetable seeds and derive opportunity benefits. Specific support from the research system will be needed to carry out the adaptive trials.

## LOWERING COST OF PRODUCTION

As has been shared many a times in the past, this will be an important factor that will decide the fate of the VVCP-E promoted vegetable growing programme in eastern Bhutan. The market is insensitive to this aspect as it has options to procure from other similar regions and this is something farmers of eastern Bhutan will need to understand and address head-on if they wish to compete in the marketplace.

While the hope of increased turnover lowering overall costs would seem to be the single largest factor to address this, it would be wrong to sit complacently waiting for this to happen. It will in fact call for focused efforts on the part of farmers through multi-intervention efforts that could take the following form:

1. Do a thorough analysis of why “on farm” costs are high, at which stage, and driven by what factors. This can then extend to an analysis of influencing factors emerging from the value chain study done (inward and outward logistics specifically) for focussed produce as decided.
2. An analysis then needs to be done to identify points that are cost burdens being created and what can be done to address them. At the same time a study could be done to understand how similar growing regions in neighbouring Nepal and India make efforts to cope with the problem.
3. Costs such as labour, inputs, logistics, and return expectations will have to be rationalised bringing them in line with competitive delivery.
4. As part of efforts, the community will need to be sensitised on (i) aspects of production optimisation, (ii) control of wastage, and (iii) concept of “multiple cash rotation” as against seeking “higher margin” on their produce that goes to reduce the number of production/sale cycles. Concepts like multiple cropping and inter cropping could be looked at for feasibility, backed by support from RNR-RDC.
5. Finally short term tactical support may need to be positioned that address those very areas posing as a challenge. As and when volumes pick up these can be reduced before being

withdrawn (read below). To address this and other identified aspects, policy interventions may be needed to resolve issues that make these elements uncompetitive.

The long term challenge to be grappled with will be on withdrawing support by way of subsidy on input supply and output management. This is in the long term interests of farmers and the nation but will have to wait till sufficient momentum has been developed allowing farmers a cushion of adjustment. Considering this is better done earlier than later, it gives another reason why upscaling plans need to be implemented on a co-financing basis to the extent feasible and at a fervent pace to raise the overall capitalisation of the VVCP-E programme.

### **IMPROVING SUPPORT SYSTEM TO MAKE FARMERS PRODUCTIVE**

While willingness and readiness of farmer groups is the essential pre-condition, it needs to be backed by a series of measures that will help the farmers and indeed the programme achieve its goals. This particularly since while the momentum can be noticed, it is not a sufficient condition to presume that farmers have the capability to go it alone. Listed below are key initiatives with needed efforts to help achieve this crucial input:

- **Group formation and capacity strengthening** – given needs of upscaling, more number of farmer groups will need to be formed and for this there will be budgetary requirements for which the development banking system can be tapped<sup>12</sup>. However a strong case must be presented to the government to allocate additional budgets to bring many more farmers into the VVCP-E fold now that the proof of concept has been established with more farmers feeling confident to pursue this livelihood option. At the same time existing groups within programmes funded by the Dzongkhag sectoral efforts, and from projects such as MAGIP could be brought into the fold.

Once groups have been formed their capacity building needs will have to be invested in and it may be worthwhile to explore creating a mentor based relationship with existing members who are performing well. This will help newly inducted farmers to learn from experienced farmers, an approach found to be highly successful in all regions of the world. These efforts need to be driven by a master plan to include coverage and scheduling for scaled up production so as to tap the market systematically by opening market linkages and not bring about a glut situation in the market.

Finally, while the initial lot of farmers may have been recipients to many subsidy based inputs, the second (scaling up) lot should be encouraged to part finance their entry cost in terms of inputs to a larger extent than the earliest lot inducted.

The primary purpose of continuing to work through the group system will be to create an aggregation unit for supply of inputs, collection of outputs, delivery of capacity building measures; and mutual observation, support and inspiration. The concept will also help in creation of a larger macro plan that helps improve and optimise the delivery and collection system, development of optimised route plans, building multiple low scale infrastructure that can be shared, and promoting efficient integration of the Farmer Friend Service Provider<sup>13</sup>. Finally, formation of groups will also encourage collection points to be mapped based on a sizeable unit from overall logistics/seasonal opportunity point of view, while also allowing lagging groups to be targeted for specific monitoring and support.

**Financial Literacy** - It is important that each farmer has a clear idea about their cost of production (including cost of labour and finance), wastage, cost to market, and returns they get. This is also important if they are to take decisions on where to sell, and for how much; as also what is the actual cost of production? This module thus needs to become an integral part of capacity building efforts and be focused on as such.

<sup>12</sup> The author draws an inference from the system within India where a development bank such as NABARD and rural commercial banks sponsor agencies and NGOs for formation, capacity building, and upscaling of group operations

<sup>13</sup> A proposed mechanism to turn rural youth to function as a service provider addressing needs of input supply, extension advisory, and harvested produce aggregator on an assigned area basis through a service charge system payable by the client

- **Increased Involvement of (RNR-RDC), Wengkhār** – The Renewable Natural Resources–Research Development Centre, Wengkhār is an invaluable resource, has much experience with the mountain horticulture system, and has been involved with the programme on an ongoing basis. This relationship can help define a mutually agreed expectation framework to meet identified needs for upscaling the programme. Among research options that need to be pursued, the following suggests areas as seem apparent at this point of time:
  - Introduction of varieties suiting market preferences, timing opportunity (early/late variety), and shorter growth cycle as feasible
  - Introduction of new crops that may have market demand and have been found to be growing in similar agro ecological endowments
  - Introduction of concepts of multi cropping and inter cropping to improve returns from land worked on
  - Efficacy trials and commercialisation of bio inputs given the preference of organic inputs for vegetable cultivation
  - Infrastructure adaptability trials for storage, polytunnels/polyhouse, micro irrigation, etc.
  - Introduction of affordable technologies after the trial phase, eg. post harvest drying facility operable at community locations.
  - It is suggested that an exposure visit be planned to the vegetable growing area in the Indian Himalayan region such as Himachal Pradesh by a team comprising RAMCO, SNV, RNR-RDC, and Extension staff to understand first hand how relevant horticulture technologies can be applied in the Bhutan context. This could lead to a possible collaborative effort between RNR Wengkhār and an Indian counterpart specifically focused on needs of mountain vegetable cultivation.
- **Relevant Technology and Farm Infrastructure Deployment** – If coverage area has to be increased within one farm unit looking to the labour intensive involvement needed to grow vegetables; provisioning of technology and infrastructure support is needed to allow a farming family unit to more optimally manage a farm unit. As such facilities such as post harvest storage, post harvest drying and processing, poly tunnel/house erection, sprinkler and drip irrigation provisioning, and implements need to be deployed in the farm to improve productivity.

Choice of technology from an affordability and suitability perspective is a very important step to upscale farm operations. Many a time technologies are hurriedly introduced and not patiently incubated to achieve the desired results. As a consequence while it is heard that everything has been tried, in the same breath you tend to hear that nothing has worked. Temptation should also be resisted to offer more expensive solutions since it reduces labour input. This is something that we at our stage of development can ill afford other than the reducing the respect for value of labour for an activity like farming. These are not desirable situations and it is suggested that a check list based regime be introduced to ensure the right induction of technology, it's adaptive redeployment if needed, and the right location of trial. Too many a times demonstration trials are placed at irrelevant locations just because a willing farmer volunteered, or a farm is located on the roadside, or even as a reward to someone for good work done otherwise. Each of these may prove to be a futile effort from the point of view of a demonstration trial.

Similarly farm infrastructure whether for storage, irrigation, or harvesting needs to be introduced with a package of practices deployed on their utilisation and maintenance. Also to an extent feasible, co-financing by the farmer should be expected if not paid fully by him; considering that in a scaled up production system investments can be recovered for vegetable crops in just 1-2 seasons. Farm level infrastructure must precede larger infrastructure investments made since utilisation of larger structures will only emerge if production increases first. Given this situation, sprinklers, drip systems, drying, and storage technologies need to be identified, tested and supported with more vigour. One model that has worked well in mountain states of India to upscale vegetable production including

introduce newer farmers is an affordable bamboo polyhouse structure using engineered bamboo technology with allied infrastructure for drip irrigation that could be relevant to Bhutanese conditions. Such facilities can be supported through establishment of a Dzongkhag level production system on a business basis.

For shared infrastructure being planned, caution needs to be exercised bearing in mind that while development of commonly shared infrastructure seems to make eminent economic sense, it poses challenges to maintenance since there is no single point ownership. As such it may be better to have specific responsibility pinned to its management and service charges collected in a practical manner from users of the facility through a service provisioning model as feasible.

In particular, this intervention could also help explore establishment of primary processing units that can be established with capabilities such as drying, pulping, blending, and finishing in forms such as whole dried products, pastes, and powders. These need to be affordable and low-technology equipment that is practical to run and maintain at the Geog level. It will be advisable to ensure deployment of mechanical/solar/biomass based technologies to meet energy needs for such a unit. However effective utilisation of equipment through supply of produce for roughly 180 days in a year would be desirable. To achieve this it would be advised that equipment planned have multiple product processing capability. It would also be advised that such units be encouraged to establish an arrangement that people can utilise on job work basis to convert small quantities of food on payment of conversion charges for those wanting a batch type processing facility for sale on their own. One situation that may make eminent sense is to position them with groups tied in to the school feeding programme allowing schools to buy dried vegetables for extending the supply time in a calendar year.

- **Making OSFS' Relevant and Sustainable** – The One Stop farmer Shop is a great opportunity that will need to move away from its current business model if it has to achieve its purpose. This is being said as in its current manifestation it is under invested and needs to raise its utility value for which additional capital will be needed. Given this need it may also be found that most community members positioned to run these units too may not be the most suited if a scale up is planned to be implemented on lines suggested below:
  - Under-capitalisation of investment is a development bane noticed many a time. This may be done to achieve an overall spread in terms of reach or to do justice to needs of all from a social perspective by giving “something to everyone”. In this context the OSFS has to be viewed as an instrument of change that has to meet its business (self-survival) needs through which it will ensure its social obligations. As such an appropriate level of investment backed by targeted turnover and profit needs to be borne in mind before rushing to open another OSFS. This is being said since very many investments lie unutilised over a period of time, and later bring pressure on government to keep them running upsetting budgetary planning. It would thus be best to invest in an OSFS (finances of government and entrepreneur both included) to the scale needed and meet returns projected, than create many more structures dotting the landscape.
  - On the other side, given the remoteness of the region and the need of travellers and dwellers there is a huge potential that can make the OSFS a differentiator to the quality of life of all who could be brought about to start depending on it, residents or the travelling population. As such expectations from it need to be redefined and in a manner scaled up with a higher level of human and financial investment that will make business sense to be scaled up over a period of time. This would need to become the norm for newer OSFS' to be established, while the established ones would have to take a transition approach over time to bring them on to the same level.
  - In this context while the DoA-RAMCO combine needs to be the strategic enabler and supporter, expectations from the promoter-investor need to be established in a formalised manner that helps the OSFS to achieve a viable potential yet not deviate from the goals set for it – this to be achieved in a manner that is sustainable over time. A judicious

balance thus needs to be achieved not jeopardising expectations of the promoter-investor involved that will call for establishing a contracting system with needed monitoring and penalties for non-compliance. Suggestions to this end have been covered in the section that follows.

- Considering most OSFS are located at vantage highway points they need to widen their service offering to raise the turnover of each such OSFS to enable them to invest more in meeting needs of input supply and output sale for farmers, both under-stocked at the current point of time. What is visible today are more shelves than material and this needs to change.
- It is proposed that each OSFS be turned into a multi-utility highway convenience point offering toilet, limited facility café, children's play area, services like cybercafé, courier, money transfer assistance, etc. It could also stock handicrafts and basic consumption items for the convenience of those who stop. By doing so people travelling on the highway will start making these points to stop and rest and use facilities contributing to cash flow of the OSFS. Linkages could be established with Bhutan Tourism's plans who could promote such stops every 50 kms (as an example) for the highway traveller and indicate the same on their map.
- An understanding of needs of travellers and the region's dwellers needs to precede the opening and stocking of an OSFS. To begin, the location of the OSFS has to be equally carefully thought off just as choosing of its promoter-investor entrepreneur. Many an OSFS have been noticed to be located at points having low relevance or in close proximity of one another, both seeming to be self-defeating decisions. As such a well structured survey in the local context and a relevant overall view would be needed as a minimum to take a decision on positioning every next OSFS.
- The selection of an entrepreneur willing to be supported for establishment of an OSFS needs to be a careful decision and not one based on helping support target achievement for which a willing volunteer becomes the sole criteria. The support itself needs to move away from a grant based approach to a "support for potential realisation" approach. It may be better to delay opening of an OSFS till such time a suitable entrepreneur is found rather than start an OSFS that has a weak future cast for it on the very day it opened. Ensuring sufficient co-financing will help motivate the entrepreneur to work hard and recover their investment.
- However remembering the core purpose of OSFS being largely established to meet input supply and marketing needs of farmers, they will be governed by easy to manage rules ensuring that turnover of other services can not exceed a certain percentage of the total. In case the turnover exceeds the norm, a flat fee will be collected to be adjusted against the capital cost of establishing the unit. In case the relationship serves little purpose overall and comes under pressure, termination of OSFS franchise could be viewed as an option.
- Continuing to address the real purpose of OSFS establishment, its utilisation by farmers has to be viewed seriously. In every likelihood, farmers will not easily commute to pick up inputs or drop harvested produce from their village to an OSFS. Given this situation the author feels that a cadre of youth could be trained to be a "Farmer Friend" service provider (*Tsonampa Chharo - TC*) on lines below:
  - Selection will need to be carried out carefully as the candidate will have to hail from the cluster of 5-6 villages that he/she will manage as a territory. It would be ideal if the youth has a motorcycle and a mobile – this can be provided support if they show potential for growth.
  - The youth will be groomed to manage the responsibility of a Farmer Friend (FF) and assume the roles of a para-extension agent, input supplier, and produce aggregator linked to the OSFS. Wherever a leader of a group wishes to assume such a responsibility they too could be considered once they agree to function on terms of a Farmer Friend.

- In this manner the FF will help scale up the utilisation and volume of the OSFS outlet and ensure better service delivery. Care will have to be taken to ensure that he/she has sufficient FGs to service and they indeed have the kind of transactions to pay for his effort.
- The revenue model for the FF will have to be studied and at this time three different income streams are being pointed out, the final mix of which will have to be carefully studied and positioned:
  - Commissions from OSFS and commission agent whose products the FF will be marketing
  - A charge to be paid by the farmer as a deduction for functioning as an aggregator and reaching the produce to the OSFS/collection point
  - Other goods/services they may choose to market independently
- A honorarium based initial payment for a time period till minimum levels of turnover are reached could be considered to give the idea a chance to seed itself, if found viable
- o Finally, it may be appropriate to offer the OSFS as a leased franchise like arrangement in terms of its operational running, yet separately contracting the land on a longer term lease so that even if the operational arrangement is taken away from a non-performing entrepreneur, the locational existence of the carefully chosen OSFS is not jeopardised by the decision to change its operational entrepreneur. This will allow the DoA-RAMCO combine to separate the two issues and pursue its growth plans stably.
- o **Improve Access to Credit** – As activity level picks up it is bound to impact needs of financing and thus credit support has to be positioned. Among options that need to be addressed could be those emerging from a micro-finance based model, or from rural credit based options depending on banking reach and “bankability” of farmers encouraging their linkage to the formal banking system. One model that could be studied is that of the “Kisan Credit Card” as pursued in India refinanced by NABARD and delivered through rural branches of banks. The system encourages farmers to open accounts at banks and offers them credit facility for advance procurement of inputs and depositing of money borrowed with interest upon harvest. While the system is meeting with reasonable success with many farmers enrolling, it will have to go through the normal learning curve since money made available easily may get diverted till the farmer clearly understands the aspect of managing it in a mature way.

Given the ambitious expectations being set for VVCP-E’s future operations and role it may be prudent to hint that unless credit is positioned as a preceding condition, upscaling will be a very slow process and to quite an extent even selective. Thus VVCP-E needs to draw a clear plan to induct this very important component and position linkages at an early date.

## Improving Market Engagement and Realisation

The second pillar on which future success of VVCP-E will depend will be opening up of markets and linking farmers to them to get fair value realisation, and instilling in them the ability to deal with markets on equal terms to the extent possible. Thus among other achievables, the pillar will try to address the following objectives:

- Increase the number of traders and volume of markets within Bhutan and increase bulk shipments to locations in India to improve on overall size of vegetable marketing operations
- Improve realisation of vegetables produced by farmers and minimise on handling wastage
- Improve supply of vegetables in a qualitative and timely manner within Bhutan through sale of sorted and graded vegetables through markets, roadside sale points, and to regions where vegetable growing is not remunerative
- Establish viable collection points and supply routes to assist the farmer in reaching choice of markets at an economical cost
- Reduce outflow of Bhutanese currency to procure vegetables from India and eventually look to export of vegetables as a remunerative foreign exchange generation means for the country
- RAMCO to function as an effective bridge between market players and farmers to smoothen the transaction flow for vegetable produce

It is understood that all efforts of upscaling production under the VVCP-E programme and other efforts planned will bear no results if market linkages are not established. However on a cautionary note even though the two are interdependent it will be unfair for the upscaling effort to wait or depend for market arrangements to be created first. There are two strong reasons for this argument, (i) Market capitalisation is largely a result of private sector infusion of capital and no such player will position their investment earlier than needed till they are sure of the continued supply of marketable material; and (ii) If scale up indeed happens then scales will be of a size where even established markets at a distance will be willing to accept the produce albeit at a lower price (to adjust for transport) that should not matter since the volume will be high.

Given the current situation, it is quite clear that positive outcomes will need to become visible for efforts pursued under the first pillar discussed earlier since without achieving sufficient scale blaming the market will be a futile exercise. This can be explained another way from the point of view that the sale realisation from last year's VVCP-E efforts rose to Nu. 5.13 million. Even if vegetables were assumed to have been sold at an average cost of Nu. 24/kg it would translate to roughly 214 MT of vegetables. While this would definitely be considered a huge improvement over past years, this annual production would not equal a quarter of a day's turnover at a market such as Barpeta Road or would not be able to cater for 5 days demand at Guwahati's Garchuk market. This comparison has not been done for any other reason but to highlight the scale prevalent between VVCP-E's production system and the market demand across the border. The words of the Barpeta trader are easy to recall, "produce quality product and ensure timely delivery at a comparative cost and the traders will land up wherever such produce is available – we go to farther places, why not Bhutan?".

The markets visited within Bhutan and India threw up similar issues as presented below when discussions were held with traders who indicated emphatically that to break into the market the following three conditions of supply need to be met first:

1. Competitive cost of supply: This will entail reducing cost of production through raised volume, improved management practices at the growing end, and optimised logistics.
2. Timely supply: The market system likes commitments to be given and met. Timely supply and "reduced time to market" on a consistent basis needs to be achieved so that the market starts to build dependency on supplies from Bhutan through quality and timely delivery, achievable only if managed well at the growing and logistics stage.
3. Respect market norms: To evoke the interest of a market we need to address its needs. As such we need to (i) tune our varieties, and (ii) supply sorted and graded vegetables in a suitable packing that reduces the workload for the trader. This will fetch us higher value as the trader is keen to get ready produce that he can ship onwards without waste of time.

## OVERALL MARKET ROLL OUT

Assuming that market needs stand well understood, production has scaled up to a reasonable degree, and domestic demand stands well addressed from a food security and market demand point of view, the stages would pan out as below, not necessarily in a linear fashion:

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**Improve home consumption and sell to non vegetable growing families within growing area**



**Tie up and saturate institutional supply possibility in local region  
– schools, colleges, hospitals, monasteries, defence**



**Organise optimal logistics facility to reach major markets within Bhutan between Samdrup Jongkhar and Thimpu**



**Increase offtake & trader base within Samdrup Jongkhar market system by delivering raised volumes as committed**



**Directly supply contracted produce as per a scheduled supply program to larger Indian markets**

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As would be evident from the above roll out suggested, entering Indian markets and managing the same is something that the VVCP-E programme should not worry about at this stage. What would be more relevant for now would be to focus on efforts to upscale production scale at a competitive cost, and deliver to Bhutanese markets through an optimised production and logistics system to meet own food needs as well as cut imports. Thinking needs to be internalised that if locally produced vegetables can't compete with imported vegetables within the Bhutanese market during its own growing season of May to October then prospects of exporting produce to the Indian market will not be easy to address. If this is indeed the situation then aspects of cost need to be first addressed to make Bhutanese produce competitive within Bhutan.

In case Phuentsholing is preferred over Thimpu for selling produce it may be largely on account of higher price realised at Phuentsholing or its ability to absorb volumes without uncertainties, delays, or rejections experienced at Thimpu. This calls for a focused study to be done to understand the relationship between the dynamics affecting Thimpu and markets enroute from eastern Bhutan; and competitiveness of produce from eastern Bhutan viz. a viz. supplies from the Indian side via Phuentsholing. Beyond the east-west corridor route other delivery routes could be looked towards the north moving to areas where vegetable production is not prevalent and market potential may exist. Such an effort should work in tandem with promotional efforts to raise consumption of vegetables within the Bhutanese household food system.

However during winter months of November to April when Bhutan's production cycle takes a break it will make sense to encourage import of vegetables from India since it has a surplus position. The focus then needs to shift on managing inward logistics to keep prices of imported produce affordable, something that is beyond the mandate of this programme but can be flagged for policy intervention.

## TRANSPORTATION AS A COST TO BLAME

While the cost head that takes the evident blame is the cost of transportation, this section attempts to clear the air about it. No doubt there is a need to reduce prevalent transport rates through improved management of the freight system but blaming this cost head may take away the attention from working on other costs that need to be optimised relating to production and collection. Data shared from a RAMCO study lays down sufficient evidence in this regard<sup>14</sup>.

It is acknowledged that transport costs within Bhutan are relatively high and it is difficult to get accurate transport rates. The rates notified by Road Safety and Transport Authority (RSTA) are not followed by transporters given frequent hikes in price of fuel. According to RSTA notification of 20th Jan 2012, rate for medium vehicles (4-5 MT) is Nu.7.05 per km and for heavy trucks (8 MT) Nu.7.84 per km which implies that trucks should charge only Nu.18126.08 from Tashigang to Bumthang (289 km) whereas in reality, trucks are charging over Nu.22,000 for the above route. The table below highlights costs from the six eastern dzongkhags to various market points within Bhutan.

**Transport cost (Nu) for each kg of vegetables to different markets**

Dzongkhag		Different end markets					
		Samdrup Jongkhar (SJ)	Bumthang	Trongsa	Thimphu	P/ling via S/J	P/ling via TPU
<b>Lhuentse</b>	B	5.36	3.95	5.01	8.09	10.88	10.06
	D	2.86	2.11	2.67	4.31	5.80	5.36
	T	2.69	1.98	2.51	4.06	5.46	5.05
<b>Mongar</b>	B	3.50	3.00	4.05	7.11	9.02	8.19
	D	2.89	2.67	3.58	5.11	5.11	4.93
	T	2.67	1.87	3.33	3.87	4.00	4.65
<b>Tashigang</b>	B	2.43	3.86	4.78	6.91	7.24	8.50
	D	2.00	3.81	3.34	4.61	3.87	5.66
	T	1.92	3.05	3.02	4.13	3.43	5.08
<b>Yangtse</b>	B	2.50	3.50	4.50	6.00	6.00	7.50
	D	1.78	3.11	3.56	5.11	3.33	6.11
	T	1.33	2.00	2.27	3.33	2.13	5.33
<b>P/Gatsel</b>	B	1.97	8.78	10.21	14.38	9.45	17.05
	D	1.57	6.97	8.10	11.42	7.50	13.53
	T	1.27	4.67	5.67	7.80	5.03	8.67
<b>S/Jongkhar (S/J)</b>	B	0.97	5.59	6.41	8.79	4.27	-
	D	0.89	4.04	4.63	6.35	3.08	-
	T	0.80	3.04	3.49	4.79	2.32	-

Key: Bolero (B) can carry 2,000 kgs, DCM (D) can carry 4,500 kgs, and Truck (T) can carry 7,500 kgs  
S/J - Samdrup Jongkhar, P/ling - Phuentsholing

If one were to check freight costs by truck from eastern districts closer to Thimphu from the above table, we can see an average cost of Rs. 4/kg for a truckload. This supply route can also be used to deliver to markets enroute such as Bumthang, Wangdue, and Punakha. Thus as stated, while the argument to rationalise freight cost needs to be viewed seriously, especially for an essential item like vegetables, freight alone can not be blamed as being the major factor driving up costs given the prevalent rate difference. Attention thus needs to be focused on cost of "on farm" production that too needs to be critically looked at. While inputs definitely need to be made available at optimal costs; production and management practices, as well as expectations of farmers need to be rationalised too. This is a point needing to be addressed seriously if Bhutan's VVCP-E efforts have to scale up to compete at higher volumes.

<sup>14</sup> Source: RAMCO study on "Cost Benefit Analysis of selling vegetables in different markets from six eastern Dzongkhags", December 2013

The table below shows determined selling price of different types of vegetables from Lhuentse Dzongkhag for different market ends and also shows the additional margin of profitability. Once production steps up and costs get rationalised overall there is enough evidence to show that market is not a deterrent as it is made out to be but in fact is ready and waiting to an extent.

**Cost structure of different types of vegetables of Lhuentse Dzongkhag  
by truck from different end markets**

Particulars	Different end markets					
	S/Jongkhar	Bumthang	Trongsa	Thimphu	P/ling via SJ	P/ling via TPU
Transport cost by truck	2.69	1.98	2.51	4.06	5.46	5.05
<b>Cauliflower</b>						
Cost of Prodn	17	17	17	17	17	17
Selling Price with 15%	22.64	21.83	22.44	24.22	25.83	25.36
Prevailing price	25	45	45	100	36	36
Difference	2.36	23.17	22.56	75.78	10.17	10.64
<b>Cabbage</b>						
Cost of Prodn	14	14	14	14	14	14
Selling Price with 15%	19.19	18.38	18.99	20.77	22.38	21.91
Prevailing price	13	25	20	30	29	29
Difference	-6.19	6.62	1.01	9.23	6.62	7.09
<b>Bean</b>						
Cost of Prodn	21	21	21	21	21	21
Selling Price with 15%	27.24	26.43	27.04	28.82	30.43	29.96
Prevailing price	24	55	55	60	27	27
Difference	-3.24	28.57	27.96	31.18	-3.43	-2.96
<b>Pea</b>						
Cost of Prodn	35	35	35	35	35	35
Selling Price with 15%	43.34	42.53	43.14	44.92	46.53	46.06
Prevailing price	34	65	50	60	44	44
Difference	-9.34	22.47	6.86	15.08	-2.53	-2.06
<b>Radish</b>						
Cost of Prodn	5	5	5	5	5	5
Selling Price with 15%	8.84	8.03	8.64	10.42	12.03	11.56
Prevailing price	10	18	18	30	13	13
Difference	1.16	9.97	9.36	19.58	0.97	1.44
<b>Carrot</b>						
Cost of Prodn	22	22	22	22	22	22
Selling Price with 15%	28.39	27.58	28.18	29.97	31.58	31.11
Prevailing price	20	45	38	60	58	58
Difference	-8.39	17.42	9.82	30.03	26.42	26.89
<b>Chilli</b>						
Cost of Prodn	20	20	20	20	20	20
Selling Price with 15%	26.09	25.28	25.88	27.67	29.28	28.81
Prevailing price	148	70	70	175	75	75
Difference	121.91	44.72	44.12	147.33	45.72	46.19

Key: Truck - 7,500 kgs capacity, S/J - Samdrup Jongkhar, P/ling - Phuentsholing

The selling price has been determined by adding up cost of production, transport cost, and 15% profit margin. Transport cost from farm to road head; food and lodging for the seller; and opportunity cost during travel and during transaction have not been included since it has been viewed as a cost to the farmer's account. As can be seen, very many vegetables offer opportunities to be sold at different markets based on their supply positioning and preferences of market based, acknowledging the supply from India.

## ENTERING INDIAN MARKETS

As and when the Bhutan consumption market saturates and surplus is available to sell in Indian markets, the penetration into the Indian market could be expected to be on lines below:

### STAGE 1

Smaller markets such as **Daranga, Kumarikata, and Tamulpur** closer to Samdrup Jongkhar already familiar with Samdrup Jongkhar will form the first stage of increased supply for its own needs and then onward supplies to the Indian market

*This stage would be best achieved by upscaling supply to SJ market yard that will help raise trader participation in terms of number of traders and sale proceeds.*

### STAGE 2

**Guwahati - Pamohi (Garchuk)**, directly or through network of SJ traders  
**Rangia** – bigger traders will step in once volumes build up, Food Processing Park coming up

**Nalabari** – medium sized 4-5 traders

**Patshala** – local consumption retail, will procure from Barpeta

**Kokrajhar** – disturbed, only local consumption retail - will procure from Barpeta

*This stage will initially source from the SJ market system through local agents and later upscale to direct contracted sale from collection points within eastern Bhutan.*

### STAGE 3

**Guwahati - Pamohi (Garchuk)**, directly or through network of SJ traders

**Barpeta Road** – the market to focus on!

**Falakata/Siliguri** – will possibly integrate with supplies from West Bhutan

*This stage will kick in when direct procurement by Barpeta Road traders will be possible through their agents for further distribution to Siliguri, Bihar, UP and even Delhi markets through the existing forwarding system*

However we need to bear in mind that while Indian markets may be an end point for sale, our efforts will need to focus on (i) improving daily offtake and trader participation at the Samdrup Jongkhar market, and (ii) progressively encourage truckload of direct contracted supply from bigger collection points within the 6 eastern districts. This would make business sense since it is not mandatory to sell through the FCB system that in any case levies a cess rate of up to 6% that can be saved if sold directly. As an example, a 9MT truck carrying vegetables at an average cost of Nu. 24/kg would have an overall value of Nu. 2,16,000 on which a 6% saving would amount to Nu. 12,960 that could be seen as subsidising freight to that extent, not taking into consideration other factors of saving on account of transshipment, loading unloading, & accompanying wastage avoided.

This can be achieved, though much will depend on stage of preparation at our end related to following factors that will become conditional to market upscaling:

1. Production volume of identified vegetables goes up substantially
2. Costs of production are such that after taking logistics cost overhead vegetables can compete with Indian off-season supply points of Shillong, Naupada, Kharupetia, & Darjeeling
3. Reliability of supply commitment in terms of quantity, quality, and timely delivery is met
4. Vegetable varieties meet Indian market norms in terms of variety, taste and physical appearance, timing of supply, and packing

The above thus become the real need for VVCP-E efforts to focus on should it want to raise its stake in the sector by engaging efforts with eastern Bhutan participating effectively in Indian markets.

Thus while on one hand our focus should be on raising production within our growing area, we need to start positioning market information systems, developing market infrastructure, and optimising

the logistics supply chain to be used for addressing Bhutan markets initially preparing us well to link to the Indian market system at a later date.

### **Internalise Aspects of the Market System**

It will be appropriate to first discuss the conceptual nature of markets that will help draw a better picture in our minds as we go about the task of engaging ourselves with them. Few points in this regard are mentioned below:

- The functioning of markets goes beyond boundaries and finds its way much like water, as long as a momentum or a level differential of price is found for those involved to profit
- Arbitrage is a concept that best describes a market's motivation to trade. It encourages movement of goods from one location of lower price to another location of higher price as long as cost of acquisition, handling and movement leave enough margin to make a profit
- Risk (financial or human) though inherent to a marketing operation is reflected through a "cost of doing business", and products continue to move (even during war or across enemy territory) as long as "profits" can be made at the end of the chain, factoring in the risk by seeing it as a cost and adding a suitable margin
- Commitment of finances decides the flexibility and strength of the buyer or an intermediary, and as such availability of finance and financial credibility is rated as a very high influence while dealing in the market system
- The mentality of the "trader" is much different from that of a "producer". The former is only interested in acquiring a produce to pass it on for a margin of profit in a minimum period of time, while the latter nurtures their produce to get a good value for it and to an extent has a higher pride and ownership in their work
- Many players are involved along the chain and each such actor performs a role for which they expect a return. There is a high level of dependency and verbal commitment that keeps the wheels of goods marketing moving. To continue to perform one's function the trader likes to be seen as meeting commitments given
- Markets are not controlled by anybody and largely reflect a price based on demand and supply for a produce. Thus while most farmers feel they should get a better price for their produce from markets, the fact is that no one owns a market and it is in no one's hands, least of all their own or even the government. As such farmers need to focus first on lowering cost of production and gaining through something under their control rather than expectantly waiting for a market to give them better returns
- All factors emerging from above such as cost of produce, financial and logistics costs, risks & wastages; are all finally factored in the price of a produce and it is said everything can technically be sold...for a price that a buyer is willing to pay
- It is thus safe to conclude that if a set of goods are available for sale, it is only a matter of time before it will find a set of buyers willing to purchase it for consumption or onward sale. However things do become difficult in the case of perishable goods since time is a factor going against it.

### **Possible Entry Strategy**

The author feels that there can't be any one definitive approach to link to Indian markets given the diverse and dynamic nature of such markets, as well as expectations from scaled up production yet to be established at the Bhutan end. For a beginning we need to bear in mind that it will be in our interests to conduct the sale within Bhutan territory (destination being Indian markets) since the controls rest better with us in such a situation. Given this aspect, two situations are likely to be encountered, (i) sales are carried out through Samdrup Jongkhar market yard (moving to others as well as feasible), and (ii) direct contracting arrangement is encouraged between farmer groups (federated at the programme end) and the traders, with routine reporting.

As a build up to reaching the stage of scaled up marketing, the VVCP-E programme will have to ensure that a Federated Institution of farmer groups is created and is able to conduct operations on a stable basis. It goes without saying that while formation and a one-year incubation phase could be supported by the government, largely the Federated Institution should be able to sustain its operational expenses through a handling margin charged for all consignment channelised through it.

Temptation should be avoided to “force create” such an institution if the momentum is not noticed – the timing thus will be of importance allowing many Farmer Groups to join in quick succession adding to the strength of the Federated Institution.

Prior to the creation and stabilisation of such a Federated Institution it will be Farmer Groups who will be the dealing entity directly moving goods to the SJ Market Yard directly or through an agent like arrangement. Creation of the Federated Institution will help lower logistics costs, protect farmer’s interests, improve accountability of delivery, and present a single face that can on a later date facilitate the entry of larger traders to directly deal with them avoiding the need to go through the SJ Market Yard and the high commission costs needing to be paid. The federated institution arrangement needs to move to a stage of maturity, one where there is a common collection, sale, and proceed distribution system at work to satisfaction of all involved. This is being said noting the tendency of farmers wanting to travel to the market to sell their produce reflecting distrust of handing over goods to anyone other than those paying them for it.

Once the above has been addressed, it would be advisable to initially encourage sales through the SJ market yard since it is regulated and is already a point of congregation of traders and producers alike. To increase the engagement with Indian markets it will be important to first establish proof of concept that produce from Bhutan is competitive on cost and quality norms. Thus it would be important that, (i) SJ Market Yard volume picks up in terms of vegetable arrivals and sale, (ii) the activity assumes a frequency of daily sales being high consistently during season time, and (iii) more number of traders (and farmers) start to flock the market (this can be expected in the normal course once stock build up improves).

Once this stage has been reached, efforts to promote Bhutanese vegetables in Indian markets can be taken up on a specific basis. As indicated, this stage could be fostered as one of two arrangements, (i) either through auction based purchase at SJ Market Yard, or/and (ii) direct contracting arrangement with the Federated Institution created. It would be ideal to grow to the second arrangement after a successful attainment of the first stage. The underlying principles as discussed in the preceding section will come into play once volumes are higher, offering value for quality produced – this will result in the word going around of opportunity available gradually drawing bigger and bigger traders to get engaged either directly or through local agents. However this will entail a time lag and patience will need to be exerted to some extent. This is the phase where farmers understanding of the process and what is folding out needs to be internalised if they are keen to reap benefits in the future.

Suggestions below point to efforts to encourage an entry for Bhutanese products in Indian markets as production scales up:

- Identify high potential traders from the existing lot functioning at SJ and grow through them: It will make sense to initially focus efforts through a few traders who understand the Bhutanese system and who enjoy our confidence to begin dealing through. Once these traders have been identified they could be given a preferred status for a period of 6 months (one season). The offer could function in the form of an incentive allowing them a deeper entry at the Collection Centre level, facilitated by VVCP-E. This is being suggested since at the Market Yard no preferential treatment can be offered to differentiate with other traders. Such a move will ensure that the new lot of vegetables will ride the logistical arrangements of current commodities such as potato and ginger, to encourage such traders to now start moving vegetables. After 6 months (one season) other traders may be keen to associate and a system of registration with norms to be observed could be framed for dealings between Farmer Groups/Federated Institution and such traders.
- Conduct Workshops and Meets to Increase Interaction: Organising a meet as a dialogue workshop can help improve interaction to inform unaware traders about the potential to do business that exists in Bhutan related markets. It can also develop a sense of ownership between stakeholders and allay fears they may have in dealing with a “foreign” country. It can also bring out points and issues of concern leading to suggestions emerging as bugbears by concerned stakeholders on both sides. If structured in a manner that gives importance to key traders on the Indian side and followed up continuously it could emerge as a platform of sustained engagement. It could possibly take the shape of a Bhutan-India Market Development group. However it needs to be borne in mind that these institutions

are easy to create but need much to sustain the interest of those brought on board and this should be borne in mind before commencing such an effort and needed energy be retained through its addressing purposes for which it was created, and not becoming self-serving institutions for those elected.

- Buyer-Seller Meets: Prominent buyers from larger markets such as Guwahati, Nalabari, Rangia, Barpeta Road, and Falakata could be invited to visit markets in Bhutan as also the growing areas and collection centres. This step should be done among other steps after the commencement of the first season through 2-3 traders identified from above markets and will help convince invited traders on the supply stability and future opportunities that exist for them. This could be planned as a two-day inward trip and may be best initiated in collaboration with organisations such as ASAMB or local market based Trader's Associations.
- Address Specially Convened Tea Meeting of Traders in India Through Market Associations/ASAMB: This will entail coordinated visits undertaken by VVCP-E marketing team to key Indian markets and will help raise volumes of the Indian market system targeted. The timing of this meet needs to be carefully planned since it has to be done at a time when traders are in town, have free time to absorb contents of the discussion and contribute to proceedings. This should be planned at a time sufficiently (but not too early) before the season to iron out negotiations should supply opportunities emerge as an option to enable timely supply during the following season.
- One to One Contact Marketing Effort: Eventually there is no substitute to this form of engagement since it allows you to direct targeted effort at a high potential client. However it will need a lot of build up to make this meeting a success since the counterparty is likely to be a high profile busy trader. However the advantage will be that if one such trader makes an entry and is satisfied doing business it could lead to a flood of other traders coming on board.
- Trial Run: A few trial runs could be done for larger markets such as Barpeta Road and Guwahati. This effort will rely on conductance of a simulated order like situation where identified traders would place an order with an existing collection agency and the same will be executed as committed. Transport cost underwriting could be considered as an option to initiate this for a few runs with cost underwriting tapering off in a few trips. This should be done only for major markets and for full truckloads, and only if other efforts seem to be well absorbed functioning more like a trigger to initiate a new process.

Care should be taken to project that efforts are done on a mutual "win-win" basis so as to set a mutual tone to the relationship and not be perceived as desperation on our part, something that a manipulative trader may be tempted to exploit. In a limited way, press conferences and press releases could get the word around once things are set at a point of "take off". Once achieved, traders would flock to markets in Bhutan since Indian traders are used to going to further away markets with much more difficult access from Indian market locations, eg. Arunachal and Nagaland.

Beyond direct efforts suggested above, efforts will also need to address initiatives mentioned below to allow raised expectations from markets to be achieved.

### **Market Infrastructure**

Specific attention will need to be given to market related infrastructure at the market yard, collection centre, and farm level. Most of these will be needed to serve needs of stocking and forwarding till quantities become viable to be shipped from a logistical point of view.

Market Yard Infrastructure: At the market yard, larger facility more on the lines of a cold store need to be established allowing for short term stocking (vegetables for overnight or couple of days) and long term (potato, ginger, onion, spices for a longer duration) storage. The first will prevent desperate sale of vegetables towards end of day and also allow sizeable quantities to be collected allowing larger shipments to be conducted since the lot will be sizeable on a rolling stock basis. The second will allow load balancing for supplies avoiding a glut situation for those commodities that can be stored for an extended period. In the process it will allow for better price realisation overall by releasing needed quantities through the year at prices that yield higher value computed after taking associated storage costs into account. Such a facility is already being planned at Samdrup Jongkhar as well as Pheuntsholing and VVCP-E should ensure adequate facility availability for its farmer

groups/federated institutions within the created system. This may be needed as else such facilities may end up getting utilised more to suit needs of large traders.

Collection Centre Infrastructure: The infrastructure at this level should have a weighing facility, accounting; parking and loading facilities for transport vehicles, and storage facility for a couple of days. Planning should be done in a manner to control damage, wastage; and minimal transit time for produce passing through the collection centre. It may be appropriate to establish grading, sorting, and packing facilities at such a point. The office area should allow for seating of functionaries and storage of documents under a lock and key system, with other basic amenities. Finally the location of each such collection centre should be carefully chosen looking to access and aggregation ability from a field storage/village level collection point. Needless to say they should integrate with overall route plans decided upon.

Finally it will not suffice to just build infrastructure for collective utilisation as it is equally important to build the participative institutional structure through a system of democratically elected committees with a mix of farmer representatives, technical resource persons, service provider representatives, and government functionaries. While market yards managed by FCB may already have such a system positioned, others may need to develop mechanisms to well manage capital investments made and FCB can play a role in establishing this on a downstream basis.

Farm Level Equipment and Infrastructure: This will vary between infrastructure and equipment needed for production such as drip and sprinkler systems, pheromone traps, and the like; and on the other hand storage infrastructure such as Zero Energy Cooling Chambers or other storage arrangements. While the first could be supported initially by way of financial support, the second should come more by way of helping farmers internalise the advantage they would have by erecting such facilities and helping them build capacity. The storage infrastructure in any case should be invested in by farmers using local materials to the extent possible with technology and training support coming from the programme. As things progress, financial support could be withdrawn for production infrastructure and the programme should work to ensure easy availability of materials and equipment at a fair price.

### **Market Information System**

Lack of information is cited to be one of the disadvantages affecting poor farmers and this will need to be addressed as production starts to pick up. During this phase of transition the following means could be adopted:

- Mass Media – while TV and newspapers can be utilised, the chances of reaching farmers through them are weak on account of their possession ability or habit. On another count this is an expensive medium to use unless deployed through a news coverage approach. However radio as indicated below could work well.
- FM Radio – this form of transmission can be used to economically reach a large farming population through which key information (for a list of these please see box on RML on next page) can be shared with farmers at a fixed time on a daily basis. However it will work well if two conditions are met:
  1. Farming community at large have an active listening habit and there is a high rate of handset ownership
  2. Content production is not difficult to manage “live” on a working day basis
- Village Market Day Awareness Drive – promotional messages can be shared by displaying through kiosks, banners, charts, and paintings on the weekly market day at a prominent location
- Other Typical Rural Promotion Means – this will cover options such as traditional plays, cultural songs, banners, wall paintings, and van operations that can be deployed looking to aspects of suitability, effectiveness and cost benefit advantage. This can be done on a dedicated basis or dovetailed into events of cultural and religious significance.
- Electronic Delivery – this would largely cover services such as SMS on mobile phone or web based/local multimedia content delivered through ICT means. However these normally are expensive processes to manage and would make sense only if a large farmer user base is

keen to access (and pay) for them which is not the case with Bhutan. Moreover it has largely been found to be useful to reach content to a lead farmer, trainer, or co-ordinator to further share content with the farming community. An example of such a service in India is shared below.

The case study below highlights a service such as Reuters Market Light (RML) as functioning within India that may find relevance once things progress and if sufficient volume is noticed.

**Reuters Market Light** is an initiative of Thomson Reuters which is a highly personalized professional information service for farmers in India. Each farmer gets spot prices of his chosen crop from nearby markets, relevant news, crop advice as per his region or crop & localized weather forecast - all as per his individual preferences, many times a day in his local language as a simple text SMS.

The service offers farmers weather information specific to their Taluka (sub-district) early in the morning (around 7:30am), market prices from 3 selected Mandis (crop market place) and tips related to specific crops (chosen by the farmer) in the afternoon, and relevant national and international news in the evening. They have a tie-up with the Maharashtra Krishi Panan Mandal in Maharashtra, and the Punjab Mandi Board in Punjab. A small example of how the service helped a farmer – timely information of the fact that Cotton was being exported from India allowed a farmer to delay sales of his cotton crop by a month; prices rose and he made a profit.

RML's activities across the value chain are as follows:

- Content is sourced largely by RML's own sourcing network. Except for weather and best practices information, the rest is developed by RML internally.
- Formatting of the content to suit SMS/Voice/WAP platforms is also managed by RML's content management system.
- Marketing is executed by agencies. Mostly through below-the-line activities like wall paintings, banners, posters, van campaigns, market activities, etc.
- Agri input shops, co-operative banks and other rural sales networks distribute RML.
- Subscription is sold in the form of prepaid scratch cards in quarterly, half-yearly and annual service packs.
- Service can be activated by calling a toll-free line.
- Delivery of SMS is managed by service providers.
- A team of multi-lingual customer care executives support features like personalisation, profile changes, delivery issues, etc.

(Extracted from the report, "Reuters Market Light: Business Model Innovation for Growth, Mr Samir Prakash and Dr Chander Velu")

RML is continuously exploring opportunities in different service verticals: dairy farming, poultry, fisheries and sugarcane. The traditional model for value-added mobile services/applications has involved three partners: the mobile network, the service providers and data/content provider. The challenge for RML is to innovate its business model from a fully vertically integrated business model as it scales up its business. The question for RML is whether it should be a content player, an aggregator or should it continue to be in distribution, delivery and customer support.

However we need to bear in mind that every such intervention should be justifiable in terms of utility and hence the ability of users to pay for it. As a beginning it is clear that a RML like facility would not serve any purpose if sufficient number of farmers are not involved, sufficient volumes not evident, and information is not used effectively to benefit from on a daily working activity basis.

### Optimise Logistics Supply Chain

Once production stands upscaled or shows signs of the same, planning can be done to optimise the supply chain lowering costs and time, and in a way also making the supply system more reliable. This will facilitate trader interaction and spur volume build-up. As stated earlier it is important that

as many trading cycles be achieved in a year as possible and to do this logistics optimisation element needs to be positioned to reduce costs and time looking to the raised level of production. The focus for this needs to come by critically looking at points of collection, level of stocking, routes, frequency of trips, transshipments, and handling costs to mention a few key points. Once volumes pick up, this aspect can become an independent subject of study to redefine points and routes with movement planning cutting down on time and costs, minimising damage and wastage.

Among other efforts a system of registered service providers should be promoted who can share indicative rates in advance to include loading/unloading, transportation, and storage services. Norms of dealings could be discussed mutually and established and non-adherence of same could lead to debarring of participation as a registered vendor. The rate card could be for a range of capacities and could be frozen for a short time period and looked at periodically as linked to other cost factors beyond the control of those involved, eg. Cost of fuel. A beginning could be made by initiating discussions with associations and bodies representing such groups, fine-tuning arrangements as things proceed while sharing widely the arrangement with the farming community transparently.

### **Monitor Price Movement & Correct Aberrations**

As a programme with the objective to improve livelihood prospects of smallholder farmers in eastern Bhutan through cultivation and marketing of vegetables it is the responsibility of VVCP-E to ensure that farmer efforts are well seeded and exploitative forces do not influence the outcome of the programme. Given this expectation, efforts should be made as part of routine activity to monitor price realisation and prevalent prices in the market. Should there be anomalies, efforts should be made through market regulatory functionaries and the policy system to make corrections as feasible. Since the programme will be able to influence the supply line this too may be feasible to leverage over time. On another count, a tracking mechanism should be established that does a comparative tracking of prices over the years in the context of locally produced vegetables and those imported. This could then lead to targeting of a couple of vegetables per season where lowered cost targets could be established and pursued as a means to compete with imports.

### **Encourage Entrepreneurship Within Bhutan**

For a mountain economy that lacks exposure to the commercial system of dealing that is the norm in the world outside it is important that farmers understand this functioning and prepare themselves to deal with it. As such it calls for raising the overall level of understanding and capability of dealing with the market based economic system affecting input, production, and output. On the other hand it also calls for developing the spirit of entrepreneurship and leadership within those who emerge as having the needed qualities that can be stoked.

Linkages should be created to such programmes being conducted as a national priority and regional linkages should ensure a certain number of farmers are trained. While this subject does not fall within the detailed scope of this study, the opportunity is being utilised to flag the need for such an effort to be positioned as all efforts will yield no result if the investment in human ability does not come up to match or exceed material investments made. Efforts should link to those of financial literacy practiced with the wider farming community.

The effort of entrepreneurship development needs to be carried out in a manner to ensure that geographical coverage is achieved with creation of informal multi-tiers at the village level to share learning. Such leaders could also be the ones to function as Farmer Friend service provider thus experiencing economic benefits from the investment made in them. However caution will need to be exercised through dealings defined to ensure that such a person should not emerge as the single largest beneficiary of the arrangement and others too have indeed benefited.

## Positioning Vegetables for Nutritional & Food Security

While nutrition needs of a family have largely been governed by traditional food menus as passed on from generation to generation, they have come under a threat in many countries on various counts. Relevant to this two specific situations may emerge, (i) hunger from lack of availability of adequate food, and (ii) lack of balanced nutritious diet even though a large quantity of food may be physically available. Various reports from WFP and IFPRI relevant to Bhutan could be studied to understand the specificity of the situation presented.

As an observation while the first category poses itself as an enormous physical challenge and can divert precious financial resource, the second impacts silently impairing a nation's ability to be productive and competitive. Fortunately Bhutan with its well managed development programmes would have (possibly) no occurrence of the first variety and even if noticed will be able to fix the negligible occurrence with ease. What it needs to caution itself against is the possibility of the second occurrence. Lifestyle changes driven by the attractive packaged food options are definitely influencing the taste buds of the younger generation that may have an impact on the nation's nutritional security. As an example, two instances come to the mind of the author, (i) a study in remote regions of Kinnaur, Lahaul Spiti, and Chamba within Himachal Pradesh in India showed children of poor indigenous habitants to be healthier than the children of affluent trading families at the same remote location, and (ii) While engaging with the Micro Nutrient Initiative program the author was shocked to learn that children of affluent and upper middle class families in large urban towns too were found to be lacking in specific micronutrients. Given this backdrop, Bhutan would do well to heed this cautionary advise since it will not take much to visualise the fate of a nation whose children grow up in an unhealthy manner.

There is thus a need to look at Bhutan's agriculture strategy as a bottom up approach to derive its meaning not from what has been growing but look to what foods need to be grown to meet nutritional and food security needs. Stated in brief, food security means that all people at all times should have access to sufficient, safe, nutritious food to maintain a healthy and active life. Three conditions are key to the achievement of this state, (i) Food availability, (ii) Food access, and (iii) Food utilisation. On the other hand nutrition security adds the dimension of health and healthy environment to contribute to adequate nutritional status with regard to protein, energy, vitamins, and minerals for all members of the family at all times.

The malady emerging from either of the situations needs to be addressed as a national priority. To address the first malady, raising food production and ensuring its efficient distribution is a solution that is easier to identify and can be pursued based on resources available. To an extent VVCP-E's current operational mandate is partially addressing this too. The second on the other hand is the more long drawn effort and one that needs a massive advocacy effort to change mindsets. This is where efforts need to be made to integrate VVCP-E's activities with those concerning food security and nutrition at the national level, with a focus on the eastern region for the moment.

Given Bhutan's concern for its people and looking to good health as being one of the most contributor to happiness the author suggests a re-look at the pursuit of agriculture. We are well aware that this is beyond the mandate of the VVCP-E programme but VVSP-E could offer itself as a key participant if such an agenda is steered by the Ministry of Health and Ministry of Agriculture. The relevance will come from building awareness, production tuning, increased production, availability, and improved consumption of vegetables to contribute to needs of food and nutritional security. VVCP-E's participation in the school feeding programme is already evidence of a step moved in that direction and this now deserves a larger commitment.

Having said this, specific implementation strategy points to address above concerns are presented below for consideration:

### SENSITISATION

Sensitisation efforts need to be launched within the Ministry of Agriculture (MoA) to ensure a "buy in" to the importance of vegetables to the subject of nutritional and food security. Once achieved,

they could approach Ministry of Health (MoH) and Ministry of Education (MoE) and FCB<sup>15</sup> with a suggested concept note proposing collaboration with efforts being pursued by them, and possible launch of a joint coordinated programme in the east with a national roll out to follow once success has been established and delivery issues are ironed out. The role of Dzongkhags is most important and ownership should be created for them to take the program through as an integrated package alongside other development goals. Efforts may require to be moved through a series of workshops, stakeholder consultations, and consultative committees formed leading to the pursuit of a joint programme.

### ADVOCACY & AWARENESS

A campaign needs to be developed for promoting consumption of vegetables from a health and economic perspective. For one it needs to target improvement in vegetable consumption by encouraging inclusion in routine diet across all economic households. It also needs to acknowledge traditional recipes, changing work routines, as also individual routine in the rural and urban context to be addressed through a balanced scientific diet plan drawn up.

While the campaign could begin by raising awareness about the need for good health through good food, it would need to lead to actionable points of connect to offer a knowledge based solution to bring about a change in the food consumption habits of people backed by easy availability of such food. While this could be launched in eastern Bhutan to begin with, if success is realised it could move to the other regions as well through the VPMP programme. A systematic review of needs would be the best approach to execute such a plan and a detailing exercise could be initiated if acceptance is found to the concept at the Ministry level.

It would be relevant to commence efforts by educating & sensitising civil servants, armed forces, villagers, monk bodies & students on the benefits of consuming locally produced vegetables. Being responsible opinion leaders within the societal system such understanding within themselves will help reach the message to a larger population that looks up to them. The essential message that needs to be conveyed is one of benefit to health and nutrition, backed with the important motive of import substitution, important to national interests of Bhutan.

Broad efforts to pursue this approach could include:

Development of collateral material in a comprehensive manner emerging from needs of the campaign in terms of posters, highway hoardings, wall paintings, booklets, leaflets, giveaways, web pages on existing web sites, painting on side of public transport, car rear glass stickers, etc. These could then be displayed through schools, OSFS, markets, government institutions, transport vehicles, and other points of delivery to deliver the message to achieve close to 100% saturation. Attractive kiosks with a banner could be positioned at points of large congregation such as marketplace, fairs, events to handout leaflets and counsel people willing to learn and lead them on to the next step of knowledge building.

The campaign could be possibly promoted through a catchy mnemonic such as a Superman character with a line, "I eat vegetables, I feel strong" or some such symbolic expression in Bhutanese language.

All schools could actively participate in such a drive by:

- Developing scientifically studied menus to execute the school feeding programme. While current menu drawn up may be meeting needs, a scientifically developed menu option developed in conjunction with a central nutrition institute would achieve goals better. Various menu options could be developed as part of this effort allowing schools at varying locations to use the one best suited to them. The existent system can help farmer groups tune their production to needs of school procurement. This will help achieve needs of food security and increase consumption of vegetables as well.
- Prominently displaying collateral material round the year to get the message across.

<sup>15</sup> This may be best achieved by getting GNHC on board through a suitable approach highlighting the value the programme holds for Bhutan

- Introducing it as a subject of learning for children encouraging them to carry the message back home
- Periodically organising events, quizzes, and information drives to educate the public at large
- Inducting new schools into the school feeding programme by first undertaking an anthropogenic baseline study that is regularly monitored to establish the benefit achieved from pursuing a balanced vegetable diet as against a routine diet – this data will be valuable to drive home the point of credible evidence and help in upscaling to a national effort
- Other institutions, educational or otherwise could also be covered in the target group of participation.
- A national culinary expert could show the way about on using vegetables as part of Bhutanese cuisine or introducing new dishes that suit the Bhutanese palate. If invested well it could take the form of a TV based cookery show hosted by a known personality with a link to all recipes hosted on a website. The expert could take an approach to introduce vegetables as fusion food that is catching the fancy of the young. This would entail introduction of newer foods (could be even through a restaurant promotion drive) away from the typical cuisine such as “*ema datsi*” & “*kewa datsi*”. Contests could be held to invite innovative nutritive recipes from local people with incentives handed out.
- Electronic and social media could be used to get the message across to citizens of Bhutan. Children in particular be targeted through audio-visual and animation based messages possibly through the mnemonic suggested in the earlier page.
- All health institution staff need to be sensitised on the need to get this message across to their patients and integrate it to their advisory and pharmacopeia delivery.

It goes without saying that these efforts will need to be backed by affordable and wider availability of vegetables in geographical, varietal, and temporal terms across the region being focussed and the joint platform of which VVCP-E could be a part can work to ensure this.

#### **MAKE SCHOOL FEEDING PROGRAM A FLAGSHIP PROGRAM**

The results observed from the school feeding programme are worthy of being scaled up. To achieve this VVCP-E needs to first iron out minor blemishes observed during the field review by the STADD team. While none of them are serious enough to warrant major action, acknowledging them and ironing them out will ensure not only a smooth future but an impetus to induction of other school-farmer group relationships.

**Issues observed:** Bugbears noticed by the STADD team gathered as feedback from school functionaries are presented below followed by suggested corrective steps:

- The choice of vegetables was not available as ordered, yet schools couldn’t buy from outside given contract signed
- In spite of a non-performing group, annual contract had to be honoured in spite of inconvenience to school administration
- Groups landed up at school with vegetable lot to deliver out of schedule
- Harvesting and storage needs to factor storage of one week post delivery at school
- The farmer group contracted for a commodity like onion when it was not grown in their area. Given escalated onion prices in the market they had to procure at a huge price from market to meet supply commitment
- Leader-centric relationship was noticed many a times. In one case the leader passed away through an unfortunate accident and the group was lost on the supply arrangement and the school had to go to the group location to stabilise supply
- Schools mentioned that weak group dynamics was noticed which may reflect on benefit sharing being weak
- In future an increase in market price may tempt farmers to compromise on contracted delivery

- Occasional cash crunch was experienced by schools on account of delayed payments from the Dzongkhag<sup>16</sup> office.
- A feeling that at times vegetables are more expensive than meat on meal cost/student basis

**Recommendations:** There is a need to reduce dependency between the farmer groups and school on each other. The relationship should be one that promotes guaranteeing of a breakeven level of return for farmers from school receipts, beyond which they should be encouraged to sell through the market system beyond that contracted by the school. This simple step could also encourage more number of groups participating in the relationship, particularly important for the upscaling phase, and will also get them to move farmer groups to the market system for future growth.

As an example, given an average of 4 MT is supplied every month to a school and 2 groups are involved, proceeds from an average of 2 MT (2,000 kgs @ avg. Nu. 12/kg) is received among 12 members of a group. Thus each group member on an average receives Nu. 2,000 every month which is a reasonable amount of money as an underwritten commitment. A threshold needs to be decided upon beyond which the Farmer Group-School contract should not be applied and dealing should be allowed to the school on an open market basis. This will ensure flexibility to the school to respectfully honour their commitment to farmer groups yet allow them to procure externally for produce not supplied by farmers. Similarly the groups too should be given a similar flexibility to sell to the open market beyond the committed supply to the school. For one it will come in handy during the two month period from December to February and during the two weeks in July when schools do not procure vegetables given their winter and summer break schedule.

On another count more groups could be introduced allowing the programme to be spread over more farmer groups. The crucial point emerging is how much of a sale assurance is good to promise a safety cover to farmer groups, beyond which they need to turn to the market, and/or procurement by school on market rate basis.

Other suggestions are:

- A system of gate delivery entry on a prior schedule basis will ensure regularising the discipline of delivery. On this basis each group will be given a mutually agreed day and time of entry with an allowance within an hour's band. Those not adhering to this discipline should not be allowed entry into the school premises and this will serve as a deterrent to those not willing to observe delivery rules laid out by the school. Of course firmness of dealing on a school's part could avoid the need for such a step as has been noticed at one location.
- A round the year vegetable planting/harvesting chart should be prepared mutually and implemented by the community. Non compliance should be left as an onus on the school to deal with in a manner they feel is right with the farmer groups having to abide by the decision of the school. This will stabilise the supply arrangement and also ensure that a vegetable not scheduled for growing is also not contracted for.
- In case of non-delivery of an agreed vegetable, the community should procure from market and meet their delivery commitment. Should this not be done, the school should have the right to procure from the market and adjust the difference in the next billing cycle of the group.
- A decision could be requested from a higher authority to terminate the arrangement if a farmer group is not seen to comply with the terms of the contract in a disciplined manner. This could include delisting or passing on the contract to another alternate group.
- Needs of school storage system had to be understood by farmer groups and needed changes carried out at the farm level to meet needs of school storage.
- The issue of weak group dynamics and leadership dominance needs to be addressed as a corrective step to be undertaken by the VVCP-E programme
- Beyond these corrective steps to be undertaken the study team recommends three initiatives that may help improve the storage and procurement needs of schools:

<sup>16</sup> However the farmer groups creditably waited for payment to arrive and then be paid. Deliveries continued as usual

- Schools should establish Zero Energy Cooling Chambers that will keep vegetables fresh for a week's period and may at times also help in maintaining a backup load if needed. Funding of materials could be considered from school budget or programme budget but technology support needs to be extended by RAMCO, SNV, and other funding agencies.
- Options should be studied if a drying facility established at the farmer group end can help produce and supply dried vegetables thus increasing the number of months of consumption as part of the school menu. Excess could be sold through market channels. This is a suggestion that will need to be studied from it economics and preference point of view but could offer a solution as agreed by the school functionaries.
- Look to having a national institute for nutrition to develop a location based menu plan meeting needs of age group based nutrition and share with schools and tune to vegetable growing plan of farmer groups.

Given the success noticed and the mutual respect between schools and farmer groups, the study team recommends that this effort be viewed as a major national effort to be upscaled by extending from the east to the west. In such an eventuality the RAMCO SNV combine could be viewed as a technical support unit taking the programme through its paces on a service delivery model to support efforts of the government.

### **KEY INITIAL EFFORTS**

If the above approach is to be taken up, kick off efforts will need to be initiated by VVCP-E to promote vegetable consumption. However eventually it should get executed in the form of a joint programme executed by MoH, MoE, MoAF, and FCB that would dovetail into national goals, positioned to achieve the MDG goal. The FCB could be a suited organisation to take this ahead although a separate division would need to be created to improve resource availability as also its accountability to deliver on needed objectives.

To begin, sharing of ideas would need to be initiated and on receiving encouragement from stakeholders concerned a concept paper would need to be developed by a nutrition & agriculture expert, and circulated to the GNHC and the 3 concerned ministries. The paper would be expected to present a serious view on the need for such a programme and the value it offered to Bhutanese people. Post deliberations and on agreement being reached on the need for and structure of such a programme, its design and budgetary allocations would need to be considered, to roll out first in a limited way and later as a national effort. The schools with whom relationships have been established as part of the school feeding programme could be used as seeding/testing grounds for this concept within the existing portfolio of VVCP-E engagement.

## Strengthening Institutional & Policy Support

Given the shape that the VVCP-E programme has taken and the likely path it can chart for itself many issues of institutional and policy significance will need to be addressed. While a detailed exercise may need to be undertaken to point to exact efforts, these points are being flagged as areas needing policy support to serve as a guide to efforts to be borne in mind.

**Upscale school feeding programme to be a national programme:** One of the most important policy decisions to be addressed would be to consider expanding the school feeding program into a national program rolling out from the east to the west. This could be done in a phased manner provisioning for budgets and operational handling ability. This suggestion is being made considering the “win-win” partnership it can develop – to schools as a steady, predictable, and organic supply line; and to the farmer groups as a basic assurance to their livelihood security. All this while the food and nutritional security needs of the country get addressed. This will help children grow up to be a healthy youth force to work effectively at the task of nation building. To this end, other than formulating a taskforce to achieve this, the aspect of departmental convergence will need to be enabled by the government through policy support.

**Address issue of financial support to farmers:** We need to be careful on the choice and level of support to farmers. Done at an early stage when a new concept is being introduced it can be understandable. However continued for a long duration and over dependence on soft sops will not bode well, either for production or market growth. Thus we need to consider this situation judiciously while upscaling. We need to realise that infused competition is healthy and encouraging protection on a continued basis would not be advisable. A balance needs to be thus achieved once proof of concept stands established. As such a view needs to be taken on how to manage this in the future and how a phasing out plan can be developed and positioned for sops presently extended. There is no recommendation to withdraw them in the near term but the consultant would recommend that a view be taken and policy measures initiated to systematically deal with the subject.

**Improve supply-chain logistics:** To prepare for an upscaled situation, logistics optimisation needs to be worked on and while most of these will be market related, few may need policy redressal measures. There may be a need to run trucks on fixed days from fixed locations to instil confidence in the community. Later a shared arrangement under a common code of operations could be considered for goods movement where truckers offer an attractive rate in return for a committed number of trucks per month with rates between various points fixed. At the same time collection centres with close proximity to farmer groups may be reviewed and supported by extending initial government support.

**Support to infrastructure:** Government support will be needed to position production and storage infrastructure. While the first will allow a household to improve productivity in coverage and quality terms through induction of irrigation, seeding, harvesting options, the latter is needed to allow aggregation of harvested produce to build up over a few days till the truck load attains a viable level.

Support to infrastructure in terms of potential OSFS, storage infrastructure at market yards and collection centres, and field infrastructure (zero energy cooling chambers, sprinklers and drip irrigation, dryers, etc.) will go a long way to promote vegetable cultivation by reducing risks. A suggestion that may be reviewed is that of establishing platform based open markets outside the school compound for absorption of surplus produce carried by farmers tied-in to the school feeding programme. This will ensure availability of vegetables to villagers between two delivery cycles to the school, something that the children too can carry back on their way home.

**Technology induction:** Promotion of new technologies and adaptive research needed to make it relevant to the needs of the region will have to be encouraged by the government and on successful trials will need to take the shape of a scheme to ensure quick and wide uptake. Support will be warranted to an institution such as RNR-RDC to develop/adapt technologies, eg. bio-inputs practical to pursue for vegetable cultivation. India has many solutions to offer and a study team may need to be constituted to study needs of the

vegetable sector in a focused manner. A long term linkage to the Indian mountain production system may be considered.

**Manage sustainability:** While mountain cultivated crops are largely organic, the pressure from market players may veer away the farmers to using chemical inputs. While growing vegetables completely organically may not be a feasible option, the government needs to take a view on remaining organic to an extent feasible and this should be reflected through measures to promote natural input based cropping or penalise input sale known to create havoc in other growing areas. This needs to be done to an extent that encourages a farmer to stay organic if desired.

**Trade barriers:** Should any barriers to trade emerge within the country or across the border the same will need to be addressed through policy measures. Facilitation of trader participation and goods movement inward and outward would be highly desirable under laid out norms if higher production in Bhutan is to find a productive market within and outside the country.

**Support to RAMCO:** Finally, looking to the outcome of the VVCP-E efforts, the government needs to consider renewed support to RAMCO backed by technical assistance from SNV. This is being suggested since the winning combination should be given support to further its successful model over a larger area, whether for the school feeding programme or the vegetable cultivation programme as a whole. More importantly, to make it happen, forthcoming support will be needed from Dzongkhags to RAMCO to enable it to function as a facilitator of Dzongkhag plans. It is suggested that a better integration be brought about between the departmental system and the VVCP-E programme.

Looking to the points presented and depending on the plans formulated for VVCP-E programme, these policy issues may be taken up through a detailing process as needed to address a subject of this serious nature.

## Annexure "A"

## Places Visited and People Met (Bhutan)

Date	Place Visited	Person Met	Designation	Institution
16th Nov, 2013	Khaling	Mr.Pema Wangchuk	Agriculture Extension Agent	RNR-EC, Khaling
		Mr.Tshering Wangdi	Coordinator	Rashong & Munghangkharkhola Veg Group, Khaling
		Mrs.Sonam Choden	Member	Dawzor Veg Group, Khaling
	Kanglung	Mr. Samdrup	Coordinator	Thragom Veg Group, Kanglung
		Mr. Shantong	Member	Ashomdello Veg Group, Kanglung
17th Nov, 2013	Ramjar, Trashiyangtse	Mr. Ram Chandra Katel	Agriculture Extension Agent	RNR-EC, Ramjar
		Mr. Karma	Member	Gochang Veg Group, Ramjar
		Mr. Yoku	Member	Pangthang Veg Group, Ramjar
	Bidung, Trashigang	Mr. Tenzin Dema	Agriculture Extension Agent	RNR-EC, Bidung
		Mrs.Sangay	Coordinator	Lemphang Veg Group, Bidung
		Mrs.Karma Yangzom	Member	Dori Veg group, Bidung
18th Nov, 2013	Pam, Trashigang	Mrs. Dendup	Operator	One Stop Farmer Shop (OSFS)
	Jampheling, Kanglung	Mr. Rinzin Dorji	Principal	Jampheling Higher Secondary School
	Khaling	Mr.Jigme Yangtse	Principal	Khaling Higher Secondary School
19th Nov, 2013	Lumang,Wamrong, Trashigang	Mr. Sonam Wangdi	V. Principal	Trashitse Higher Secondary School
		Mr. Phuntsho Dorji	Coordinator	Kheshing Veg Group
		Mrs. Kezang Choden	Coordinator	Reserbu Veg Group
	Tshelingkhor, Zobel, Pemagatshal	Mr.Norbu Rinchen	Coordinator	Tshelingkhor Veg Group
		Mr. Dorji	Member	Pangthang Veg group, Ramjar
	Orong, Samdrup Jongkhar	Mr.Ugyen Penjore	Principal	Orong Higher Secondary School
		Mrs. Pelden Tshomo	Agriculture Extension Agent	RNR-EC, Orong
		Mr. Tuala	Member	Gomenang Veg Group
		Mr. Lobzang	Coordinator	Orong Veg group
20th Nov, 2013	S/Jongkhar	Mr. Kinley	Staff	FCB Auction yard, Samdrup Jongkhar
		Mr. Ajit Choudhary	Indian trader	Samdrup Jongkhar
25 <sup>th</sup> Nov, 2013	Phuentsholing	FCB Staff RAMCO Staff		FCB Office

## Annexure "B"

**Places Visited and People Met (India)**

<b>Date</b>	<b>Place Visited</b>	<b>Person Met</b>	<b>Designation</b>	<b>Institution</b>
20 <sup>th</sup> Nov, 2013	Rangia Market	Mr. Prakash Jaiswal	Potato & Trader Commodity Trader	Businessman
21 <sup>st</sup> Nov, 2013	ASAMB Office, Guwahati	Mr. Jyoti Pathak	Assistant Publicity Officer & Nodal Officer, Website	ASAMB
21 <sup>st</sup> Nov, 2013	ASAMB Office, Guwahati	Mr. R.P. Dutta	Garchuk Market Officer	ASAMB
21 <sup>st</sup> Nov, 2013	Garshukh Market, Guwahati	Mr. Ganesh Deka	Market Incharge	ASAMB
21 <sup>st</sup> Nov, 2013	Organic Market Hub, Guwahati	Mr. Kalpajyoti Neog	Chairman	Neog Agro Alliance Ltd. (+91-88765-13160)
		Mr. Raman Patwari	Manager	Neog Agro Alliance Ltd.
22 <sup>nd</sup> Nov, 2013	Nalabari Market	Mr. Golog Burman	Vegetable Wholesale Trader	Businessman (+91-98641-47902)
22 <sup>nd</sup> Nov, 2013	Pathshala Market	Mr. Nava Kumar Das	Vegetable Wholesale Trader	Businessman (+91-73998-57145)
23 <sup>rd</sup> Nov, 2013	Barpetta Road Market	Mr. Hari Krishna Sharma	Market Incharge	ASAMB (+91-99543-24283)
		Mr. Kader Ali	Vegetable Wholesale Trader	Businessman (+91-94351-23728)
23 <sup>rd</sup> Nov, 2013	Bongaigaon Market	Mr. Hari Pada Das	Vegetable Trader	Businessman (+91-99540-14408)
23 <sup>rd</sup> Nov, 2013	Falakata Market	Mr. Kailash Shah	Vegetable Wholesale Trader	Businessman (+91-78728-32570)
		Mr. Rama Dey	Vegetable Wholesale Trader	Businessman (+91-97333-71995)
		Mr. Jayguru Bhandar	Vegetable Wholesale Trader	Businessman (+91-98324-30466)
		Mr. Vivek Sharma	Vegetable Wholesale Trader	Businessman (+91-76793-04726) viveksharma8813@gmail.com



*Celebrating 25 years of sustainable  
and inclusive development in Bhutan*