

Sindhuli Road Corridor Commercial Agriculture Promotion Project (SRC-CAP)

# COMMERCIAL AGRICULTURE PROMOTION (CAP) APPROACH HANDBOOK FOR EXTENSION STAFF



An Extension Guide  
For Market-Oriented Vegetable Farming



Ministry of Agriculture and Livestock Development / Japan International Cooperation Agency



## Backgrounds

Sindhuli Road, which links Kathmandu valley and Terai was constructed by Japanese Grant Aid. In order to prepare for the expected changes by the opening of the Sindhuli Road, Government of Nepal (GoN) with the technical assistance from JICA, launched the project for the Master Plan Study on High Value Agriculture Extension and Promotion in Sindhuli Road Corridor (SRCAMP) from April 2011 to March 2014 and drafted the Master Plan and Action Plan to implement prioritized projects.

Based on the request of Government of Nepal (GoN), Japan International Cooperation Agency (JICA) supported to the then DoA/MoAD for a technical cooperation project which aims at increasing farmers' agriculture income through establishing a value-chain for high value commodities along Sindhuli Road Corridor through Sindhuli Road Corridor Commercial Agriculture Promotion Project (SRC-CAP). The Project team has developed an effective market-orientated horticulture extension approach which is named Commercial Agriculture Promotion (CAP) Approach after its Project name.

CAP Approach aims at the behaviour and mind-set changes in farmers so that they can manage their farming as business with their own initiatives. Many farmers tend to grow their crops first, and when the harvest season approaches, they rush to find buyers for their produce. As consequence, they tend to sell their produce at low prices. CAP Approach promotes farmers to visit to markets and to directly communicate with buyers to collect the information on trend of demand, and to maintain the communication with buyers to obtain updated information. Based on such information from markets, farmers decide what to grow, when to grow and how to sell their crops. This is the behaviour and mind-set changes from "Grow and Sell" to "Grow to Sell". To bring about such changes in farmers, CAP Approach adapts the SHEP Approach<sup>1</sup> developed by JICA in Africa into the Nepali context.

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<sup>1</sup> JICA (2018) *SHEP Handbook for Extension Staff: Practical Guide to the Implementation of the SHEP Approach*, Japan International Cooperation Agency, Tokyo  
[https://www.jica.go.jp/english/our\\_work/thematic\\_issues/agricultural/shep/index.html](https://www.jica.go.jp/english/our_work/thematic_issues/agricultural/shep/index.html)







## Preface

We are very glad to present the Operational Guidelines of the Commercial Agriculture Promotion (CAP) Approach. This is an output of the “Sindhuli Road Corridor Commercial Agriculture Project (SRC-CAP)”, which has been implemented for five years between 2014 and 2020 by the Ministry of Agriculture and Livestock Development (MOALD) through the Department of Agriculture (DOA) with the technical and financial assistance from the Japan International Cooperation Agency (JICA).

SRC-CAP aimed at facilitating smallholder farmers to shift their mind-set and behavior from “Grow and Sell” to “Grow to Sell”, in order for them to increase their agriculture income by undertaking market-oriented agriculture. To this end, the project enhanced the knowledge and skills in vegetable farming and marketing of the target farmers and officials and staff of the three tiers of government of Nepal, by adapting the SHEP Approach of JICA into the reality of the target farmers.

The Operational Guidelines consist of the following three volumes. First, “The CAP Approach Handbook for Extension Staff” explains the concept behind as well as the procedure to facilitate farmer groups to carry out a series of the CAP Approach activities. This volume is targeting the extension staff of the local governments and other organizations, which are involved in providing agricultural extension services to farmer groups.

Secondly, “The Manual for Training to Extension Staff to Promote the CAP Approach” provides the concept behind as well the procedure to conduct a series of training on the CAP Approach. This volume is targeting to the officials and staff from Ministry of Land Management, Agriculture and Cooperatives (MOLMAC); Agriculture Development Directorate (ADD) and other organizations of the provincial governments, providing technical backstopping to extension staff.

Finally, “The CAP Approach Guidelines for Local, Provincial and Federal Governments” explains to decision makers and officials of the three tiers of governments of Nepal, about the concept behind as well as the procedure to apply the CAP Approach within their own jurisdictions in view of the promotion of market-oriented agriculture to smallholder farmers.

These three volumes were produced based on the experiences and lessons learnt through the implementation of SRC-CAP, with inputs from DOA, MOLMAC and ADD of Province 3, the 10 Local Governments of Dhulikhel, Namobuddha, Roshi, Temal, Melung, Khandadevi, Sunapati, Sunkoshi, Golanjor, Kamalamai, and the JICA Project Team for SRC-CAP.

In conclusion, I would like to express my sincere congratulations and appreciation to all the stakeholders from the institutions mentioned above for achieving the project objective and for producing this set of Operational Guidelines. I also extend my cordial thanks to JICA for its cooperation in the implementation of this important project. Even after the completion of SRC-CAP, all stakeholders will coordinate and collaborate to promote market-oriented agriculture to our smallholder farmers by referring to the Operational Guidelines. I hope that as many stakeholders and farmers as possible have opportunities to touch and apply this precious CAP Approach.

February 2020, Kathmandu



Ms. Niru Dahal Pandey  
Director General, Department of Agriculture (DOA)



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# PART 0. PURPOSE

“PART 0. PURPOSE” explains the purpose of this Handbook for Extension Staff and the relationship with other two volumes of the Operational Guidelines of the CAP Approach.



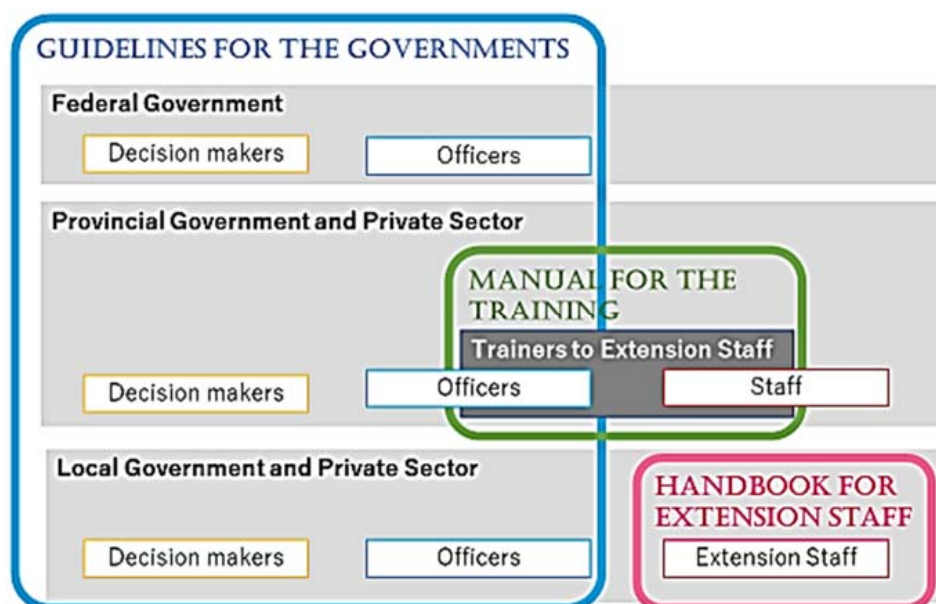
This Handbook for Extension Staff aims at serving as a guide for the Extension Staff of Local Government and any other organizations who are working for farmer groups in Nepal, in their agricultural extension service delivery to promote market-oriented agriculture with the CAP Approach.

In order to apply the CAP Approach on the ground, this Handbook cannot go alone and should be referred to as part of the 3 volumes of the CAP Approach Operational Guidelines, namely, the Handbook for Extension staff, the Manual for Training to Extension Staff and the Guidelines for the Local, Provincial and Federal Governments of Nepal. The main target users of each volume of Operational Guidelines are illustrated in Table and Figure below.

**The main target readers of the 3 volumes of Operational Guidelines**

Volume of Operational Guidelines	Main target users	Affiliated institution
Handbook for Extension Staff	Extension Staff	<ul style="list-style-type: none"> <li>Local Government</li> <li>Private sector (firms, international and local NGOs)</li> </ul>
Manual for Training to Extension Staff	Trainers to Extension Staff	<ul style="list-style-type: none"> <li>Provincial Governments</li> <li>Private firms (firms, international and local NGOs)</li> </ul>
Guidelines for the Governments	Decision makers, officers in charge of planning and budgeting	<ul style="list-style-type: none"> <li>Local, Provincial and Federal Governments</li> </ul>

Source: SRC-CAP



**Distribution of the main target readers of each volume of Operational Guidelines**

Source: SRC-CAP





# PART 1. CONCEPT

“PART 1. CONCEPT” explains the main concept of the CAP Approach together with its background, advantages and actual effects and impact on the ground.

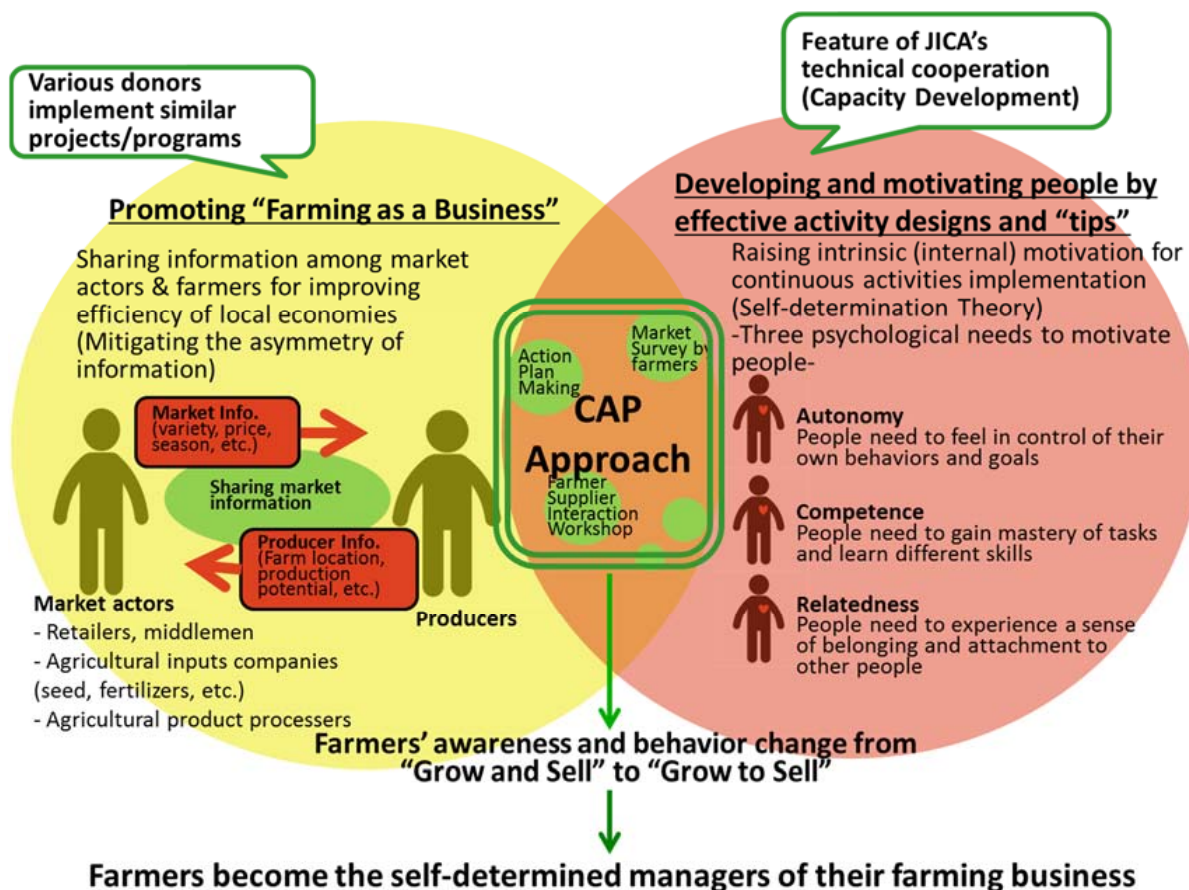


# 1. Concept of CAP Approach

## 1.1 Two Key Pillars of CAP Approach

### The Two Pillars as the backbone of Approach

CAP Approach, which adapts the SHEP Approach, aims at empowering smallholder farmers in their endeavor to pursue market-oriented agriculture of horticultural crops. It tries to build farmers' capacity to undertake farming as a business in a sustainable manner through imparting necessary marketing and production skills to them. In the process, CAP Approach attaches a special emphasis on supporting farmers' autonomous motivation as it is an essential ingredient for achieving farmers' self-reliance and sustainable outcome that CAP Approach envisions. The diagram below depicts these two pillars CAP Approach is based upon, which address both issues of "promoting farming as a business" and "empowering and motivating farmers". Both pillars, which are the backbone of CAP Approach, are supported by academic discourse and research: the former by an economic theory called "Markets with asymmetric information" and the latter by a psychological theory called "Self-Determination Theory".



### Two pillars of CAP Approach

Source: JICA 2018 edited by SRC-CAP

### The Economic Theory: Markets with Asymmetric Information

The circle on the left illustrates CAP Approach's main strategy for materializing market-oriented, as opposed to production-oriented, agriculture. CAP Approach believes asymmetric information, i.e.

imbalanced information, between smallholder farmers and market actors such as vegetable buyers, agricultural input sellers, and financial institutions and so forth is one of the strongest factors of inefficient local economy, which smallholder farmers often suffer from. The economic theory called “markets with asymmetric information” proposed by the 2001 Nobel laureates in economics, namely, George Akerlof, Michael Spence, and Joseph E. Stiglitz, aptly explains this situation. The theory argues that **overcoming information asymmetry is the key to amend an imbalance of power in transactions and to vitalize efficient local economy.** Based on this understanding, CAP Approach helps farmers to fill the information gap between them and their business partners through means such as teaching farmers how to conduct market surveys as well as helping them to establish business linkages with market actors (Column 1).

### Column 1 Mitigating information asymmetry by CAP Approach



#### **PROBLEMS** caused by asymmetric information

- Trade, i.e. buying and selling of horticultural crops, is not established because buyers cannot find producers and vice versa, crops are not meeting the market requirements, and crops are undersupplied at certain times, etc.
- Prices can be distorted because farmers need to agree to unfairly low asking prices due to their ignorance of market prices.
- Transactions are not continuous or unstable because buyers as well as producers cannot establish business networks they can trust.
- Transaction costs, such as searching and bargaining costs, are large because without stable business relationships both buyers and producers need to find their business partners each time.

**SOLUTIONS** through means such as CAP Approach’s farmer-initiated market surveys, matching forums and farmer-supplier interaction workshops

#### **RESULTS** after mitigation of asymmetric information

- Farmers widen their business networks and have more options to choose from for their business partners.
- Farmers and market stakeholders understand each other’s situations and work on establishing a win-win situation.
- Farmers discover various opportunities to penetrate the horticultural market.
- Farmers and market stakeholders build trust for continuous business trading.



### **The Psychological Theory: Self-Determination Theory**

American psychologists, Edward Deci and Richard Ryan, proposed three psychological needs that motivate people in their theory on human motivation called “Self-Determination Theory”. According

to the theory, people feel motivated when their needs for autonomy, competence or relatedness are supported. In the case of CAP Approach, a series of activities are designed so that they can unlock farmers' motivation toward market-oriented agriculture, taking into consideration these three psychological needs (Column 2). For instance, farmers are guided to conduct market surveys on their own so that they can feel in control of their own action, which leads to supporting their need for autonomy. By carrying out market surveys successfully, the farmers also feel that they have gained mastery (skills and knowledge) of this particular task and learned new skills. Finally, CAP Approach asks those farmer representatives who have conducted the market surveys to go back to their farmer group and share the results of the surveys with their fellow farmers. Through that process, the farmers feel a sense of belonging and attachment to the group members, which in turn, contributes to supporting their psychological need for relatedness.

### **Fulfilling Two Requirements for Sustainability**

CAP Approach's strength lies in the fact that all its activities are designed to fulfil both requirements maintained in the above-explained economic and psychological theories at the same time. In other words, CAP Approach tries to mitigate the asymmetry of information in the market while it also supports farmers' psychological needs for autonomy, competence or relatedness. Because of this dual-purpose intervention, the target farmers' awareness and behaviour change from "Grow and Sell" to "Grow to Sell" will be realized, and they will be able to manage their farming business on their own initiative even without external support once they have completed the CAP Approach training course. CAP Approach's vision is, after all, to train farmers to become self-reliant so that they can continue developing their farming business and improve their livelihoods without creating dependency syndrome.

#### **Column 2 Three psychological needs for raising motivation**

##### **AUTONOMY**

The need for autonomy is the desire to act on one's own initiative – or rather, the desire to not be controlled by others. People do not want to be the pawn in a chess game, but the chess player.

In order to support farmers' needs for autonomy, extension staff are advised to prepare opportunities for farmers to know and feel the market by themselves through their own actions such as market survey by themselves with adequate orientation by extension staff. These direct experiences could contribute to supporting autonomy more than simple information provision by extension staff. Also, extension staff need to be careful of the language and should never order or command farmers to do a task. They also need to communicate to the farmers the rationale for engaging in each of the CAP Approach activities, provide choices in terms of what task to do and how to do it, and listen to their opinions on how to do the task. Accepting farmers' feelings of discontent and criticism toward the task is also important since the farmers will feel their viewpoints are regarded as meaningful, which, in turn, promotes the feeling that they are acting on their own initiative.



## COMPETENCE

Competence is the ability to interact effectively with one's environment. We feel competent when we have successfully made an impact on our environment, in cases such as when we are able to achieve a task as planned in advance, or when we feel that our abilities are improving and when our curiosity is satisfied.

To provide competence support to farmers, it is necessary to breakdown the goals of the task into small steps and increase the numbers of milestones at which they can feel the impact of their action. In addition, it is also important to be specific about what farmers are doing well so that they gain knowledge that will be useful in judging how well they are doing. To both ends, it is helpful to make farmers understand why, when, and how much they need to do in order to attain each of the small goals or milestones.



## RELATEDNESS

Relatedness is the desire to have good relationships with others. The relationship between the person giving the task and the person receiving the task has a big effect on the latter's motivation towards the task. As an extension staff, being trusted by the farmers undertaking CAP Approach activities is the most important thing for relatedness support. In order to build trust with the farmers, extension staff are advised to listen attentively to what the farmers have to say in their CAP Approach engagement and to be both physically and psychologically available for the farmers so that they can rely on them.



## 1.2 CAP Approach's Four Essential Steps

### Four Essential Steps

With reference to the Self-Determination Theory, CAP Approach offers a series of capacity development trainings to the target farmers in such a way that the farmers' motivation is raised through supporting their three psychological needs and minimizing the information asymmetry. For instance, CAP Approach gives farmers various trainings in an optimal order. This order is called "CAP Approach's Four Essential Steps" as depicted below.

Further, it is recommended for extension staff to facilitate farmer group members reflecting each step in order to utilize the lessons and learnings for the next season's activity.



Four Steps	Activities
1. Farmers understand the goal	- CAP Approach Workshop
2. Farmers' awareness is raised	- (Optional) Matching Forum - Market Survey by Farmers - (Optional) Farmer Supplier Interaction Workshop - Participatory Baseline Survey - Study Tour
3. Farmers make decision	- Action Plan Making (Crop Selection, Crop Calendar Making & Resource Mobilization)
4. Farmers acquire skills	- On-site Coaching
Follow-up and monitoring (including Participatory Endline Survey)	

### ***Step 1. Farmers understand the goal***

First and foremost, Extension Staff regards sharing its goal and vision with the beneficiary farmers as the crucial first step because it is the farmers themselves, after all, who make the most effort to materialize economically viable farming business throughout the training course. Farmers need to be convinced of, and agree with, the goal CAP Approach tries to achieve. Organizing the **CAP Approach Workshop** is a specific way to share this goal with the target farmers. Refer to “1.1. CAP Approach Workshop” in PART 2 of this Handbook.

### ***Step 2. Farmers' awareness is raised***

The second step is concerned with raising farmers' awareness in the area of opportunities and potential of horticultural farming. This step is extremely important since without this awareness the farmers have less chance to be motivated in making a commitment to change their farming practices for the better. This step mainly involves exposing the farmers to business and market realities. Activities for Step 2 include **Matching Forum** (as an optional activity), **Market Survey by Farmers**, **Farmer-Supplier Interaction Workshop** (as an optional activity), **Participatory Baseline Survey by Farmers** conducted by farmers themselves and **Study Tour**. Refer to “2.1. Matching Forum (optional activity)”, “2.2. Market Survey by Farmers”, “2.3. Farmer-Supplier Interaction Workshop (optional activity)”, “2.4. Participatory Baseline Survey” and “2.5. Study Tours” in PART 2 of this Handbook.

### ***Step 3. Farmers make decisions***

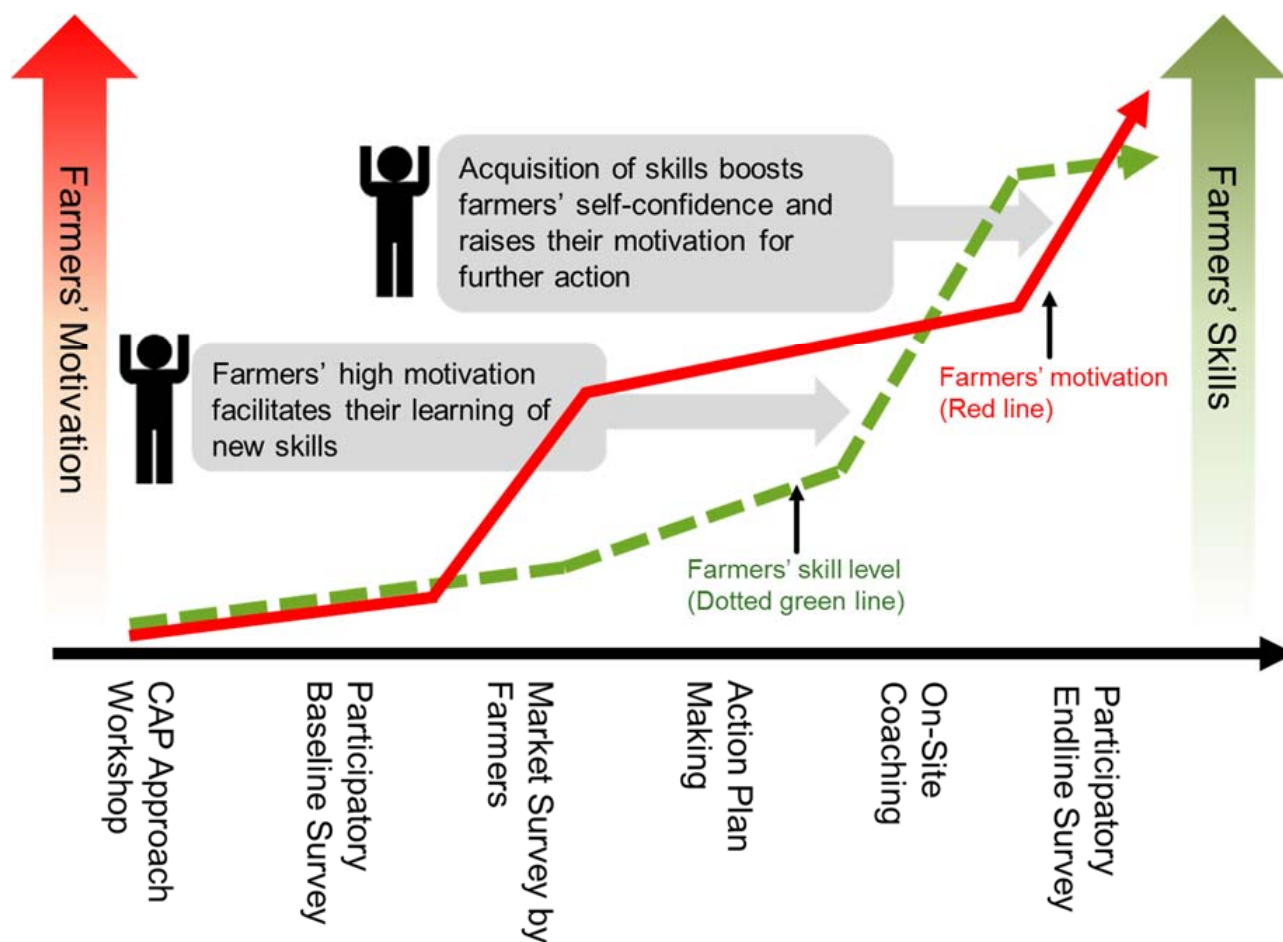
With the awareness and new knowledge, the farmers gained in the second step, they then make decisions to make a change. This is the third step called **Action Plan Making**. This process involves farmers (1) selecting target crops, (2) making crop calendar and (3) mobilising resources so that they will be able to strategically supply their target crops to the specific markets of their choice with the right timing. Refer to “3.1. Action Plan Making (Crop Selection, Crop Calendar Making and “Resource Mobilization” in PART 2 of this Handbook).

#### Step 4. Farmers acquire skills

As the fourth step, the extension staff provide technical solutions in farming and marketing challenges to the farmers, i.e. give **On-site Coaching** for the crops the farmers selected, so that they can produce the crops as they have planned. Refer to “4.1. On-site Coaching” in PART 2 in this Handbook.

#### Interlinkage Between Motivation and Skills Development

Why does the CAP Approach take the rather time-consuming four steps instead of jumping to the 4<sup>th</sup> step, On-site Coaching? It is because CAP Approach believes that farmers need to first be motivated for them to learn and acquire new skills. CAP Approach considers that the series of training activities should take into consideration the interlinkage between farmers’ motivation and skills development. As shown in the diagram below, if the farmers are not motivated, it will be difficult for them to learn something new. On the other hand, if they can feel their skills are improving, their self-confidence will be strengthened, and they become motivated to take further action.



#### Interlinkage between motivation and skills development

Source: JICA 2018 edited by SRC-CAP



CAP Approach's four steps, or the optimum order of activities, which was examined and validated in Nepal, take into full consideration this interlinkage between farmers' motivation and skills development. Therefore, it can bring optimal results on the ground in terms of farmers' skills acquisition and high motivation.

### **1.3 “Gender and Social Inclusion” in the CAP Approach**

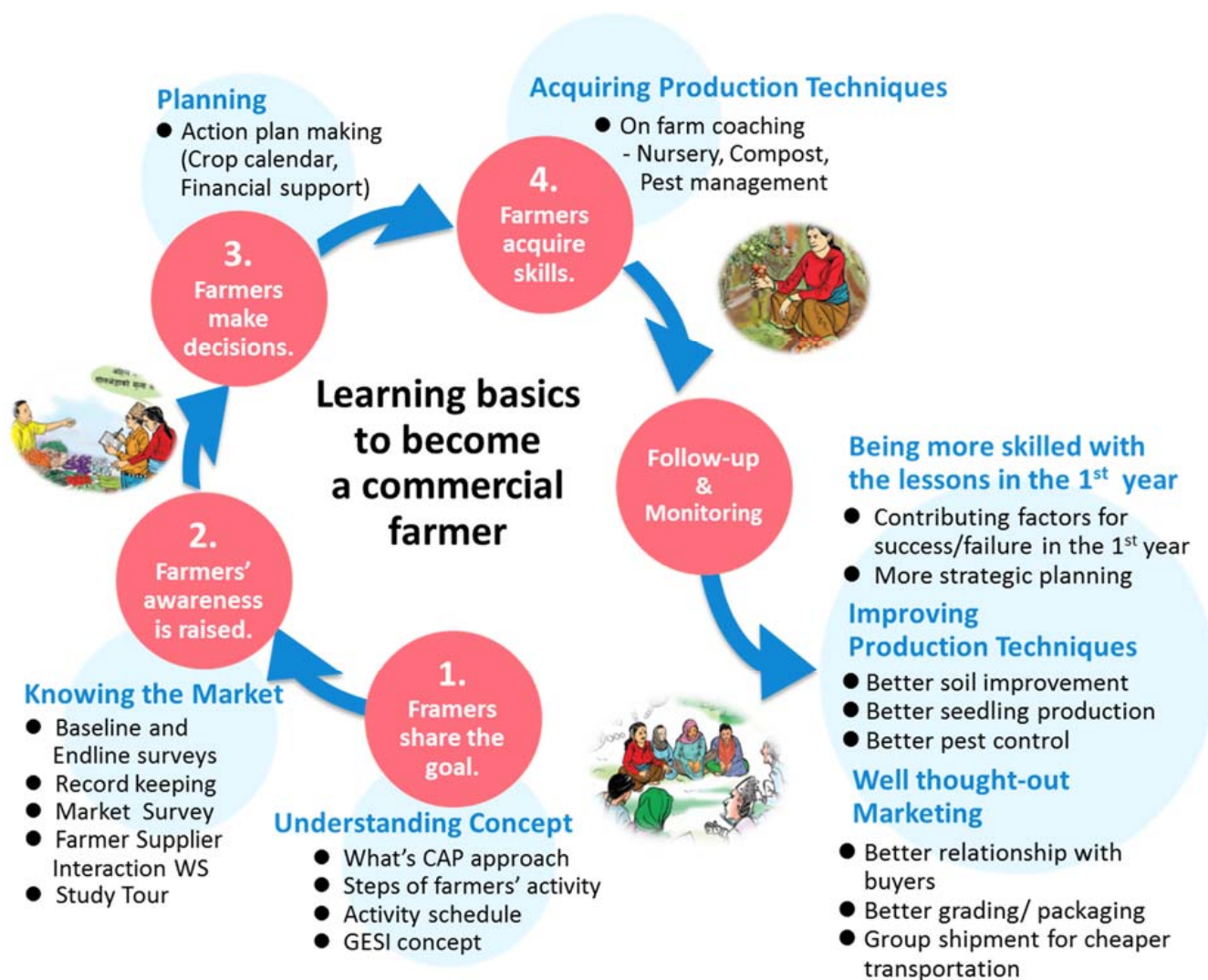
In line with ADS 2015-2035, CAP has also given emphasis on Gender and Social Inclusion (GESI) as one of the major cross cutting thematic area and incorporated it's thrust in all the activities. The project believes that one of the keys for success in market-oriented vegetable farming is that those members from the same household or family, including husband and wife, work as business partners by sharing the responsibility, burden and benefits incurred by their vegetable farming and marketing.

The CAP Approach promotes joint decision making on farming and marketing by those business partners from the same household or family throughout the following activities:

- 1) Providing a GESI training to the Farmer Group members at the initial stage so that they understand the importance of GESI perspectives in market-oriented agriculture;
- 2) Encouraging women and marginalized members to take the decision making positions (chairperson, secretary, treasurer etc.) in the group to make their voice heard;
- 3) Providing equal opportunities to male and female Farmer Group members for all kinds of capacity development activities to enhance their knowledge and skill on commercial farming;
- 4) Encouraging the Farmer Group members to keep the Farm Management Book and share the status of farming with other family members;
- 5) Encouraging the Farmer Group members to share lessons learnt from the project activities with other family members so that decision in vegetable farming and marketing are jointly made by their business partners at the household level;
- 6) Inviting the business partners of the Farmer Group members to other important activities of the project, such as action plan making, on-site coaching and reflections to facilitate them to reach an agreement or consensus in their farming and marketing.

## 2. Implementation Steps

The figure below is the illustration of the implementation steps. As explained in the following sections in PART 2, CAP Approach has 4 basic steps. After farmers receive assistance on these 4 steps in the first crop season, they continue some of these 4 steps in the second season in the first year. With the lessons learnt from the first year, farmers can become more strategic in production and marketing in the second year. It is recommended for effective results that farmers continue the cycle for 4 crop seasons in 2 years. For further details in implementation steps, refer to “1. Selection of CAP Approach Activities” in PART 3 of this Handbook.



# PART 2. ACTIVITIES

“Part 2. ACTIVITIES” explains how to undertake each activity of the CAP Approach in detail.



## **0. Step 0- Group Selection**

The foremost step in the CAP Approach is group selection. A functional group is essential in market-oriented vegetable farming for smallholder farmers. A smallholder farmer needs a help from their fellow group members in many activities such as input purchase, joint plantation, produce sales and pest management. A smallholder farmer does not usually produce enough volume of vegetables for a full truck load from their own field, though they may face difficulties in the sales without that volume.

CAP Approach envisages that the implementer selects a group of farmers with some experiences and knowledge of vegetable farming for become market-oriented vegetable farmers. The Approach does not work effectively and efficiently for those farmers who have already established commercial farming or are yet at a subsistence level. The Approach can work best for those farmers who have some experiences selling their vegetables in the vicinity. It is considered that such farmers have some knowledge of vegetable farming and its marketing before introducing the CAP Approach.

Based on the experience of CAP Approach, the followings are some common characteristics of successful farmer groups in vegetable farming:

1. The farmer groups are accessible all year-round by roads and transports
2. The farmer groups have regular monthly meetings and very good group unity
3. The leaders of the farmer groups address issues in a transparent manner and are interested in working for the members
4. Agriculture is the main livelihood of the farmer groups and is the only livelihood they have potentials to improve
5. The farmer groups have good access to markets (3-4 hours of road transport)
6. The group members are interested in increasing their income through vegetable farming and marketing
7. The group members may have both low land and upland for farming
8. The lands of the group members are irrigated
9. The group leader (and/or the field facilitator) are actively involved in vegetable farming and marketing

### ***Objectives***

The objective of group selection is to successfully implement the CAP Approach by encouraging the target farmer groups to be engaged in collective efforts for market-oriented vegetable cultivation and its marketing

### **Key Implementation Tips, Effects, and Enhanced Motivation**

<b>Tips</b>	<b>Effects</b>	<b>Motivation</b>
<ul style="list-style-type: none"><li>• Extension staff share the selection results with all the members and their partners</li></ul>	<ul style="list-style-type: none"><li>• All the members and their partners have the same information from the beginning of the CAP Approach.</li></ul>	Relatedness
<ul style="list-style-type: none"><li>• Extension staff explain the reasons their farmer groups are selected</li></ul>	<ul style="list-style-type: none"><li>• Farmers feel confident and recognized that they have potentials to expand commercial farming</li></ul>	Relatedness

### **Implementation Procedure**

- Extension staff may submit the technical recommendations to set the criteria for the selection of farmer groups
- Upon the request from the authority of the Local Government, Extension staff will collect and provide necessary information on the existing farmer groups in the jurisdiction to facilitate the group selection. Extension staff may also make a list of candidate farmer groups based on the set criteria.
- Implementer select the beneficiary farmer groups with reference to the above mentioned CAP Approach's common characteristics of successful farmer groups.
- Once the beneficiary farmer groups are selected, Extension staff will inform the results to all the members and their partners of the selected farmer groups and facilitate them to make a resolution to participate in the CAP Approach.

## 1. Step 1- Farmers understand the goal

The first step of the CAP Approach is to share CAP Approach's goal with the farmers. CAP Approach is not an approach for providing material or financial assistance to farmers. It is a capacity development intervention where farmers need to make a strong commitment in learning new knowledge and skills through their participation in CAP Approach. The ultimate goal of CAP Approach is to empower farmers both technically and socially so that they can continue practicing market-oriented agriculture, or "farming as a business", with an entrepreneur mind-set. This message should be clearly communicated to the target farmers so that they will be motivated to attain the CAP Approach goal.

### 1.1 CAP Approach Workshop

Four Steps	Activities
1. Farmers understand the goal	- <b>CAP Approach Workshop</b>
2. Farmers' awareness is raised	- (Optional) Matching Forum - Market Survey by Farmers - (Optional) Farmer Supplier Interaction Workshop - Participatory Baseline Survey - Study Tour
3. Farmers make decision	- Action Plan Making (Crop Selection, Crop Calendar Making & Resource Mobilization)
4. Farmers acquire skills	- On-site Coaching
Follow-up and monitoring (including Participatory Endline Survey)	

We are here.

### Objectives

The CAP Approach Workshop aims at sharing the CAP Approach vision and goal with the farmers, which is, to help them become self-reliant farmers with entrepreneurial aspirations.

### Outline

This workshop at farmer groups' site includes the overall concepts of CAP Approach, the concept of "change from 'Grow and Sell' to 'Grow to Sell'" through the case of Rajan, group management, gender in commercial agriculture through the case of "Rupa" and how to use Farm Management Notebook, in order to prepare for next activities in "Farmers' awareness is raised" in Step 2. For more information on "Raja" and "Rupa", refer to "Picture Story (*Kamishibai*) of Rajan" and "Picture Story (*Kamishibai*) of Rupa" respectively, in PART 4 of this Handbook

### Key Implementation Tips, Effects, and Enhanced Motivation

Tips	Effects	Motivation
<ul style="list-style-type: none"> <li>Both the farmer group members and his / her</li> </ul>	<ul style="list-style-type: none"> <li>Farmer group members and their partner from the same household understand that it is important to involve both woman and man</li> </ul>	Relatedness

Tips	Effects	Motivation
partner in farming participate in workshop	household members for a successful commercial farming	
<ul style="list-style-type: none"> <li><b>Kami-shibai</b> (picturestory telling) show of Rajan is performed for understanding market concept, and that of Rupa for gender in commercial agriculture</li> </ul>	<ul style="list-style-type: none"> <li>Farmers who are often illiterate understand contents better than texts and lectures</li> <li>Extension staff can remind farmers from time to time of the importance of Rajan's experiences for commercial farming and Rupa's experiences for gender in commercial farming in later stages</li> </ul>	Competence
<ul style="list-style-type: none"> <li>Summary of the group management is delivered</li> </ul>	<ul style="list-style-type: none"> <li>Extension staff can facilitate farmers to get the knowledges on group management such as what is group management, what is the role of leader and others and how to communicate each other etc. in advance all the group activities</li> </ul>	Relatedness
<ul style="list-style-type: none"> <li>Farm Management Notebook is explained and distributed</li> </ul>	<ul style="list-style-type: none"> <li>Farmers understand in advance all the activities they will be engage in throughout the project assistance period</li> </ul>	Autonomy

### Implementation Procedure

- Extension staff prepare necessary inputs / resources and materials for the workshop and arrange dates and venues convenient for target farmer groups in advance.
- In the workshop day (Table as below), extension staff first deliver the key concepts, activities and financial support.
- Extension staff distribute a Farm Management Notebook or any material to keep farm records to each pair of farmer group members and partners and explain that it contains all the activities they will engage in throughout the project assistance period.
- Then, they explain market concepts and gender in commercial agriculture by using **Kami-shibai** (picture story) panels of Rajan and Rupa.

### Timetable of "CAP Approach Workshop" (example)

Time	Topics	Materials
15min	<ul style="list-style-type: none"> <li>Registration</li> </ul>	<ul style="list-style-type: none"> <li>Attendance list</li> </ul>
15min	<ul style="list-style-type: none"> <li>Introduction of participants</li> <li>Objectives of the training</li> </ul>	
30min	<ul style="list-style-type: none"> <li>Concept and activities of CAP Approach</li> <li>Explanation of Farm Management Notebook</li> </ul>	<ul style="list-style-type: none"> <li>Presentation of "What is CAP Approach?"</li> <li>Farm Management Notebook</li> </ul>
45min	<ul style="list-style-type: none"> <li>Understanding Market: A Case of Rajan</li> </ul>	<ul style="list-style-type: none"> <li><b>Kami-shibai</b> (picture story) panels</li> </ul>
30min	<ul style="list-style-type: none"> <li>Gender in Commercial Agriculture: A Case of Rupa</li> </ul>	<ul style="list-style-type: none"> <li><b>Kami-shibai</b> (picture story) panels</li> </ul>
30min	<ul style="list-style-type: none"> <li>Group management</li> </ul>	
15min	<ul style="list-style-type: none"> <li>Reflection</li> </ul>	



## Box 1 *Kami-shibai* (picture story) show of Rajan and Rupa for better understanding

***Kami-shibai*** is a Japanese word meaning story panels with pictures, which look like flip charts. *Kami* means paper and *shibai* is a play or drama. CAP Approach developed a *kami-shibai* type of material in full-colour made of thick paper. The front page of a paper panel is for farmers to look at and has many pictures. The back page has descriptions of the pictures so that extension staff can read them aloud to the farmers.

### Why?

Farmers often find it difficult to understand what the extension staff say because there are problems caused by inappropriate wording and theoretical stories in extension messages to farmers for non-farming information such as marketing and gender

### How?

Through means of ***Kami-shibai*** (picture story) show:

- Farmers understand extension messages through easy wording and visual information.
- Farmers understand extension messages through real examples.



- राजनको बजारसँगको २० बर्षको सम्बन्ध बारे यो एउटा कथा हो ।
- यो कथामा मुनाफा बढाउन किसान र ब्यापारी बिच कसरी आपसी विश्वास कायम गर्ने भन्ने बारे धेरै सिकाईहरु छन् ।
- राजन काभ्रे धुलिखेलका एउटा सफल तरकारी उत्पादन गर्ने कृषक हुन् ।
- उनले १८ रोपनी जग्गामा पारिवारिक श्रमबाट मात्र काफ्रो, काउली, गोलभेडा र आलु उत्पादन गरी रहेका छन् ।
- उनले वार्षिक करिब रु ३० लाखको तरकारी बेच्छन् ।



### Results?

After mitigation of inappropriate wording and theoretical stories in extension messages:

- Farmers understand extension messages through easy wording and visual information.
- Farmers understand extension messages through real examples.

## Formats

The followings are some pages of Farm Management Handbook, whose whole contents are included in the attached electric files.

  <p>सिन्धुली सडक खण्ड ब्यावसायिक कृषि प्रवर्धन आयोजना (SRC-CAP) कृषि भूमि व्यवस्थापन तथा सहकारी मन्त्रालय/जापान अन्तराष्ट्रिय सहयोग नियोग,जाईका</p>	मिति: _____																																																														
<p><b>ब्यावसायिक तरकारी खेती:</b> “उत्पादन पछि बिक्री”बाट “बेचको लागी उत्पादन” फार्म ब्यावस्थापन अभिलेख पुस्तिका वर्ष: _____</p>	<p><b>स्थलगत तालीम:फार्म अभिलेख</b></p> <p><b>फार्म अभिलेख (नमुना)</b> (कृषियोजनाको उदाहरणमा उल्लेख गरिए अनुसार कृषिउत्पादनमाभए गरेको आयदानीखर्च मापउल्लेखगर्नुहोला । यसमाअव्य धरधरवसीखर्चहरु जस्तै वैभिकउपयोग गरिने सामग्री सावुन,पिनी, चामल,तेल,रुपडा, केटाकेटीको कापीफलम,विद्यालयपशुको ईत्यादी समावेशनगर्ने ।) बानी गोल्बेडा खेकल १० रोपती</p>																																																														
नाम: _____ समुहको नाम: _____ ठेगाना: _____ मोबाइल नम्बर: _____	<table border="1"> <thead> <tr> <th colspan="3">खर्च</th> <th colspan="3">आम्दानी</th> </tr> <tr> <th>मिति</th> <th>विवरण</th> <th>लागत (रु.)</th> <th>मिति</th> <th>जम्माआम्दानी (रु.)</th> <th>जम्मा परिचाय</th> </tr> </thead> <tbody> <tr> <td>२०७४/०१/०</td> <td>जम्मा भाडा</td> <td>१,८००</td> <td>२०७४/०२/०</td> <td>२,३००</td> <td>२,३००</td> </tr> <tr> <td>२०७४/०२/०</td> <td>गोल्बेडा बीउ</td> <td>४३०</td> <td>२०७४/०३/०</td> <td>४,०००</td> <td>४,०००</td> </tr> <tr> <td>२०७४/०२/०</td> <td>रासायनिकमल</td> <td>७००</td> <td>२०७४/०३/०</td> <td>४,२००</td> <td>४,२००</td> </tr> <tr> <td>२०७४/०२/०</td> <td>जानावारी ज्यामी</td> <td>६००</td> <td></td> <td></td> <td></td> </tr> <tr> <td>२०७४/०३/०</td> <td>बिजारी</td> <td>३३०</td> <td></td> <td></td> <td></td> </tr> <tr> <td>२०७४/०३/०</td> <td>हुवाची</td> <td>२००</td> <td></td> <td></td> <td></td> </tr> <tr> <td>२०७४/०३/०</td> <td>हुवाची</td> <td>३००</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2">जम्मा</td> <td>४,८००</td> <td>जम्मा</td> <td>११,०००</td> <td></td> </tr> </tbody> </table> <p><b>आम्दानी विवरण</b></p> <table border="1"> <tr> <td>जम्मा खुद आम्दानी (२-१)= ... (३)</td> <td>६,९०० रु.</td> </tr> </table>	खर्च			आम्दानी			मिति	विवरण	लागत (रु.)	मिति	जम्माआम्दानी (रु.)	जम्मा परिचाय	२०७४/०१/०	जम्मा भाडा	१,८००	२०७४/०२/०	२,३००	२,३००	२०७४/०२/०	गोल्बेडा बीउ	४३०	२०७४/०३/०	४,०००	४,०००	२०७४/०२/०	रासायनिकमल	७००	२०७४/०३/०	४,२००	४,२००	२०७४/०२/०	जानावारी ज्यामी	६००				२०७४/०३/०	बिजारी	३३०				२०७४/०३/०	हुवाची	२००				२०७४/०३/०	हुवाची	३००				जम्मा		४,८००	जम्मा	११,०००		जम्मा खुद आम्दानी (२-१)= ... (३)	६,९०० रु.
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## 2. Step 2- Farmers' awareness is raised

CAP Approach's second step is to provide the farmers with ample opportunities in which they can raise awareness of their current situations as well as find opportunities the horticultural business can offer to them. This is the step where CAP Approach farmers go through eye-opening experiences and further raise their motivation to take concrete action for materializing market-oriented agriculture. Therefore, this step is extremely critical and extension staff should make sure that the farmers open their horizon for horticultural farming as a business through exercises such as baseline surveys and market surveys.

### 2.1 Matching Forum (Optional Activity)

Four Steps	Activities
1. Farmers understand the goal	- CAP Approach Workshop
2. Farmers' awareness is raised	- <b>(Optional) Matching Forum</b> - Market Survey by Farmers - (Optional) Farmer Supplier Interaction Workshop - Participatory Baseline Survey - Study Tour
3. Farmers make decision	- Action Plan Making (Crop Selection, Crop Calendar Making & Resource Mobilization)
4. Farmers acquire skills	- On-site Coaching
Follow-up and monitoring (including Participatory Endline Survey)	

We are here.

### Objectives

The main objective of Matching Forum is to help farmers establish business linkage with buyers of vegetable crops and learn about marketing for their produce. It also aims to overcome mistrust and misunderstanding between farmers and buyers. Therefore, the forum includes only farmers and buyers and does not include agricultural inputs, equipment, financing or insurance. Matching Forum is also an opportunity for buyers to expand their business. Matching Forum can be used as an introductory activity prior to Market Survey by Farmers.

### Key Implementation Tips, Effects, and Enhanced Motivation

Tips	Effects	Motivation
<ul style="list-style-type: none"> <li>Profiles of farmers and buyers are exchanged beforehand</li> </ul>	<ul style="list-style-type: none"> <li>Participants can start discussions on their producing / handling situations better, leading to better mutual understanding</li> </ul>	Relatedness

## Implementation Procedures

### Preparation

Extension staff find potential buyers and decide which buyers to invite and how many.

- Extension staff need to explain to both buyers and farmers the purposes of the Matching Forum to encourage them to participate in it, before bringing organizing the forum.
- Extension staff arrange venues and bring their farmers there.
- Extension staff facilitate the farmers and the buyers to interact each other by exchanging information.
- Extension staff help farmer groups hold a feedback session where the representatives share and discuss with fellow farmers about what they have learned and how they can apply lessons to their farming practice.

### Timetable of Matching Forum (example)

**Venue:** District or Municipality level

**Participants:** a male and a female farmer each from 5-10 farmer groups and 5 -10 buyers

Time	Topics
15 minutes	<ul style="list-style-type: none"><li>Introduction and objectives</li></ul>
30– 60 minutes	<ul style="list-style-type: none"><li>Presentation of production and marketing situations by each farmer group (5-10 minutes each)</li></ul>
60 minutes	<ul style="list-style-type: none"><li>Interaction time between farmer groups and buyers. Each farmer group freely talks with buyers individually</li><li>Exchange of contact numbers</li></ul>
30 minutes	<ul style="list-style-type: none"><li>Snack and tea</li></ul>

### Formats

The following format is a farmer group's profile which shows the production, potential and season of their farming.

कृषक समुहको उत्पादन जानकारी				
जिल्ला : सिन्धुली				
गाविस : भद्रकाली				
संपर्क ब्यक्तिको नाम र फोन नं : निर्मला गौतम (९८० ७६२ १००१)				
क्र.सं.	तरकारीको नाम	तरकारी टिप्ने महिना	समुहको बार्षिक उत्पादन (किलो)	संभाव्य उत्पादन (छिमेकीबाट)
१	अदुवा	साउन-माघ	५३,०५०	५,०००
२	काउली	असोज-फागुन	१६,२१५	१५,०००
३	टमाटर	फागुन-भदौ	१४,९००	१३,०००
४	आलु	असार-फागुन	१३,६००	१२,०००
५	प्याज	वैशाख-जेठ	४,२५०	३,०००
६	काका,करेला	फागुन-भदौ	७,२००	८,०००
जम्मा			१,०९,२१५	५६,०००

## 2.2 Market Survey by Farmers

Four Steps	Activities
1. Farmers understand the goal	- CAP Approach Workshop
2. Farmers' awareness is raised	- (Optional) Matching Forum - <b>Market Survey by Farmers</b> - (Optional) Farmer Supplier Interaction Workshop - Participatory Baseline Survey - Study Tour
3. Farmers make decision	- Action Plan Making (Crop Selection, Crop Calendar Making & Resource Mobilization)
4. Farmers acquire skills	- On-site Coaching
Follow-up and monitoring (including Participatory Endline Survey)	



We are here.

### Objectives

Market Survey by Farmers s are conducted by farmers themselves in CAP Approach with the facilitation and support of extension staff. The main purpose of CAP Approach's farmer-initiated market survey is to encourage farmers to have hands-on experiences of understanding how markets operate and what markets want from the producers. At the same time, by conducting market surveys, farmers will be able to build a rapport with various market players, such as wholesalers, retailers, middlemen, etc., and widen their interpersonal networks which can contribute to creating a win-win situation with the market stakeholders.

Farmers obtain useful market information to decide the variety of crops to be cultivated in the coming year, the annual crop calendar, and the buyers to whom they are going to sell each of their produce. Buyers, in turn, obtain the information on farmers who can produce those crops with high profit. Suppliers obtain the information on possible clients.

Farmers are expected to make their own annual action plan of farming and marketing based on results of the market surveys, and therefore, it is important for farmers to continue doing the market survey until they get enough information through market surveys in the same or different markets.

Farmers should be encouraged to keep contact with those buyers to whom they may sell their produce during the farming period to continue confirming the selling conditions of their produce".

## **Key Implementation Tips, Effects and Enhanced Motivation**

<b>Tips</b>	<b>Effects</b>	<b>Motivation</b>
<ul style="list-style-type: none"><li>• Farmers decide which markets to visit</li></ul>	<ul style="list-style-type: none"><li>• A sense of autonomy is enhanced</li></ul>	Autonomy
<ul style="list-style-type: none"><li>• Buyers for interviews are pre-selected and well-informed beforehand</li></ul>	<ul style="list-style-type: none"><li>• Farmers know whom to meet and ask questions beforehand</li><li>• Farmers are paid attentions well and avoid awkwardness in asking questions</li></ul>	Competence Relatedness

## **Implementation Procedures**

### **Preparation**

- A. Extension staff check the production capacity of farmer groups and suggest possible markets for survey. For instance, if farmer groups 'produce is limited, small-scale local markets will be suitable. If farmer groups 'produce is large, their target markets will be larger, provincial or national markets. The destination markets should be decided by farmers by comparing possible markets, thus, it is not recommendable for extension staff to make this decision for farmers.
- B. For the practice purpose, Extension staff may decide to which market he/she can take farmers for their OJT, though.
- C. Extension staff inform to and ask for cooperation from the representatives of the market which their farmer groups will visit with official letters from Implementers.
- D. Extension staffs explain to farmer groups about the meaning of the market survey format and clarify what kind of information to collect in the market survey. Extension staff help them practice the survey in a role play at the group.

### **Survey day**

- E. For the first market survey, extension staffs accompany the representatives of farmer groups when going the target market and help them ask questions to the buyers in the markets.
- F. From the second market survey onwards, farmer group members themselves conduct surveys on their own. Only representatives from the farmer groups attend the practice, but for the actual market surveys any farmer group members or their household members can conduct.

### **After the survey**

- G. Within a week of the market survey, extension staff help farmer representatives to hold a workshop to share information collected from the market with their group members.”.



## Box 2 Market Survey Changes Farmers Behaviour

### Why?

Farmers did not know how market is moving although market determines actual prices of vegetables. Farmers also do not know traders that distribute vegetables and have direct connection to the market. As a result, farmers do not know how to get more profit through vegetable production and marketing.

### How?

CAP Approach provided farmers with opportunities of practice to talk directly with traders at markets. Through the practice, farmers can recognize that they can collect the information through market surveys on actual market demand on the variety, quantity, quality and timing of sales of crops.



### Results?

Farmer groups continue doing market surveys by themselves and keep contact with some of traders to get updated information on markets. The followings are examples of positive effect of markets surveys by farmer

#### ***Changing the crops***

Farmers used to crop maize, finger millet in rainy season. After market survey, they have found out that demand for tomato is high so changed to tunnel tomato and earned Rs 20,000 per tunnel. [Shrijanshil, Khandadevi RM]

#### ***Changing the seasons***

Farmers used to crop cauliflower in winter season but after market survey they noticed that during festival seasons demand was high, so they started to cultivate 3 months earlier to market in festival seasons. [Shree Vyankure Devi, Melung RM]

#### ***Changing the marketing practices***

In the past, farmers just sold all their products in bulk. Now, they sort and grade their vegetables [Bhimeshowr, Sindhuli]



## Formats

The following is the market survey formats to be filled by farmers.

**बजार सर्वेक्षण फाराम**

मिति: \_\_\_\_\_ बजारको नाम: \_\_\_\_\_

संलग्न सदस्यहरू: \_\_\_\_\_

ब्यापारीको नाम र सम्पर्क नं.	लक्षित तरकारी र जात	अत्याधिक माग हुने समय (महिनाको नाम)	मुल्य (रु./केजी)	परिमाणरमात्रा र आपूर्तिको पटक	भुक्तानी अवधि	थोक तथा खुद्रा ब्यापारीको अपेक्षा
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	
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				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	

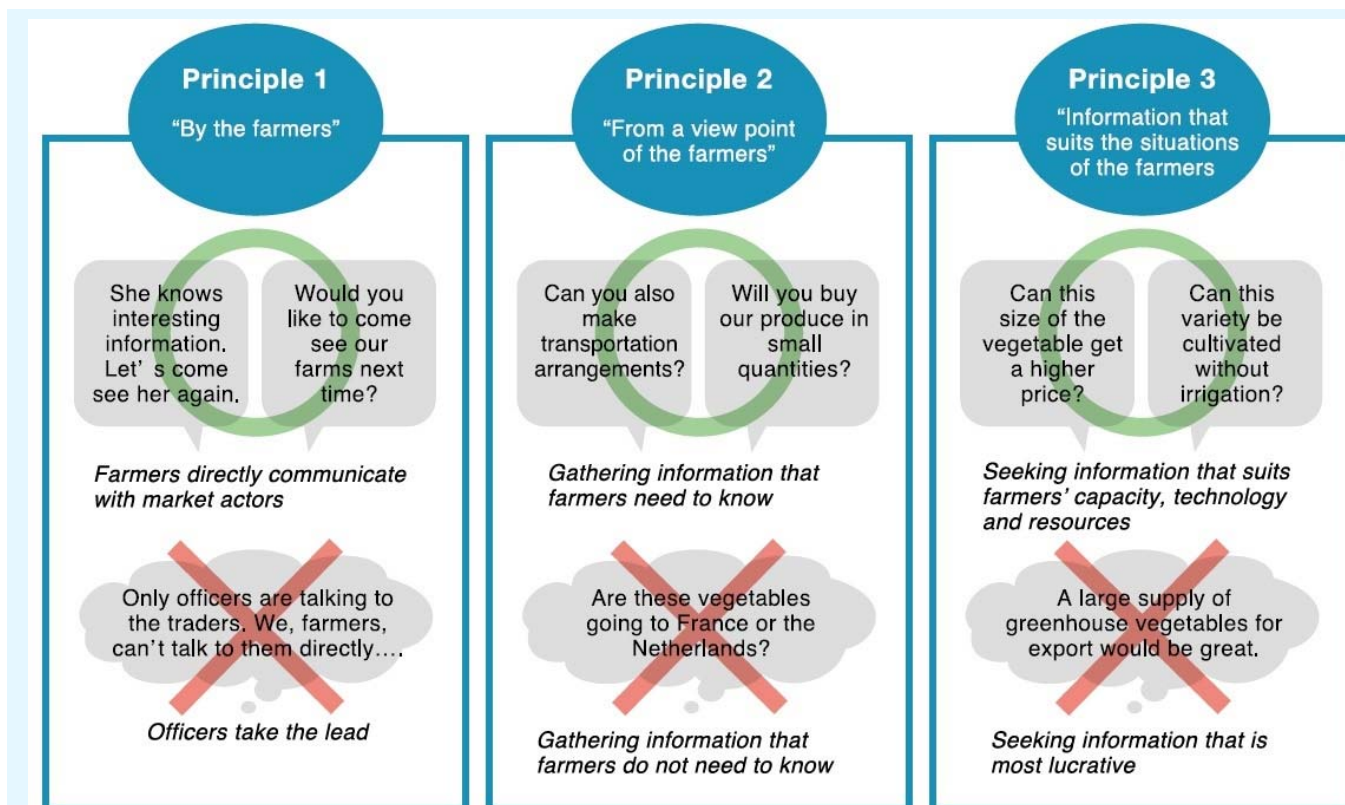
### Column 3 Three Principles of the CAP Market Survey by Farmers



CAP's market survey demonstrates the three very important "principles" which place an emphasis on supporting farmers' psychological need for autonomy and competence. The three principles are: to collect information (1) that suits the situations of the farmers, (2) from a viewpoint of the farmers, (3) by the farmers in order for the farmers to explore business possibilities and options. Unlike the conventional notion of market surveys,

CAP's market survey is not only about getting market prices. Rather, it is about finding business potential and options. CAP's three principles in market surveys are shown in the diagram below.





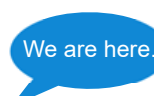
Among the three principles, perhaps the most vital of all is the element of surveys "conducted by the farmers". Farmers' autonomy and ownership of market surveys are extremely crucial for the success of CAP activities.

CAP's market survey, which tries to capture not only market prices but also multidimensional market information, is, in fact, designed to uncover "tacit knowledge" the market possesses. In order to access, feel and understand tacit knowledge, it is necessary to share experience and have a dialogue with those who possess such tacit knowledge. In this sense, it is important for the farmers to go to the market themselves and observe/have direct conversations with the market actors such as buyers, middlemen, shoppers and so on. This is why it is critical for the farmers themselves to do market surveys.

CAP's market survey is to uncover the tacit knowledge of the market, which is relevant to, and beneficial for, the target farmers. In other words, SHEP's market survey is to utilize and share the farmers' own tacit knowledge with the tacit knowledge of the market. The two types of tacit knowledge will be effectively combined and formed into new knowledge in the process of the market survey.

### 2.3 Farmer-Supplier Interaction Workshop (Optional Activity)

Four Steps	Activities
1. Farmers understand the goal	- CAP Approach Workshop
2. Farmers' awareness is raised	- (Optional) Matching Forum - Market Survey - <b>(Optional) Farmer Supplier Interaction Workshop</b> - Participatory Baseline Survey - Study Tour
3. Farmers make decision	- Action Plan Making (Crop Selection, Crop Calendar Making & Resource Mobilization)
4. Farmers acquire skills	- On-site Coaching
Follow-up and monitoring (including Participatory Endline Survey)	



#### Objectives

The main objective of FSIW is to help farmers establish business linkage with market actors involved in vegetable business and learn about agricultural inputs, equipment, financing and insurance which are useful for their vegetable farming. FSIW also provides an opportunity for agricultural input suppliers and service providers with an opportunity to expand their business. No buyer (not only middlemen and wholesalers but also any type of buyers) but only service, equipment and goods suppliers are the target together with farmers for FSIW.

#### Outline

Suppliers/service providers introduce their businesses / services (5 - 10 minutes each) through presentation, and they interact with participating farmers at the exhibition venue outside later on.

#### Key Implementation Tips, Effects, and Enhanced Motivation

Tips	Effects	Motivation
<ul style="list-style-type: none"> <li>Both women and men participate in workshop</li> </ul>	<ul style="list-style-type: none"> <li>Information on services, goods and equipment to meet needs of both men and women in farming will be collected</li> </ul>	Relatedness
<ul style="list-style-type: none"> <li>Exhibition of farming inputs are conducted in the venue</li> </ul>	<ul style="list-style-type: none"> <li>Through face-to-face conversations with input suppliers, farmers understand the pros and cons of various farming inputs (equipment, machines, seeds, etc.)</li> </ul>	Autonomy Competence

## **Implementation Procedures**

### **Preparation**

Extension staff find potential suppliers and service providers and decide which suppliers to invite.

### **Timetable of FSIW (example)**

**Venue:** Provincial, District or Municipality level

**Participants:** A male and a female farmer each from 30 farmer groups and 10-20 suppliers / service providers (seed suppliers, fertilizer/pesticide suppliers, agricultural machinery suppliers, banks / microfinance institutions, agricultural insurance company, etc.)

<b>Time</b>	<b>Topics</b>
60 minutes	<ul style="list-style-type: none"><li>• Registration (Tea and snack)</li></ul>
30 minutes	<ul style="list-style-type: none"><li>• Objectives and procedure of the workshop</li><li>• Presentation on CAP: Achievements</li></ul>
80 minutes	<ul style="list-style-type: none"><li>• Suppliers/service providers introduce their businesses / services (5 -10 min each) through presentation</li></ul>
10 minutes	<ul style="list-style-type: none"><li>• Remarks / Announcement</li></ul>
60 minutes	<ul style="list-style-type: none"><li>• Lunch break</li></ul>
120 minutes	<ul style="list-style-type: none"><li>• Interaction time at the exhibition venue outside. Each farmer group freely talks with suppliers/service providers individually</li></ul>
15 minutes	<ul style="list-style-type: none"><li>• Wrap-up in group: Each farmer group wraps up information they get and take notes for sharing with fellow members back home (tea and snack).</li></ul>
15 minutes	<ul style="list-style-type: none"><li>• Comments from representatives from suppliers and service providers</li><li>• Closing remarks</li></ul>

## 2.4 Participatory Baseline Survey

Four Steps	Activities
1. Farmers understand the goal	- CAP Approach Workshop
2. Farmers' awareness is raised	- (Optional) Matching Forum - Market Survey by Farmers - (Optional) Farmer Supplier Interaction Workshop - <b>Participatory Baseline Survey</b> - Study Tour
3. Farmers make decision	- Action Plan Making (Crop Selection, Crop Calendar Making & Resource Mobilization)
4. Farmers acquire skills	- On-site Coaching
Follow-up and monitoring (including Participatory Endline Survey)	

We are here.

### Objectives

The participatory baseline survey gives the target farmers opportunities to look at their current farming situations in terms of production, income and farming techniques so that they can clearly identify areas for improvement. The farmers also understand the importance of record keeping. This occasion enables extension staff to gather hard data on the target beneficiaries' farming practices, which, at a later stage, will be used to monitor the results of CAP intervention.

### Key Implementation Tips, Effects, and Enhanced Motivation

Tips	Effects	Motivation
<ul style="list-style-type: none"> <li>Both the farmer group members and his / her partner in farming participate in Baseline Survey</li> </ul>	<ul style="list-style-type: none"> <li>Point of view of all the partners, including women and men, are reflected to better identify the current situation of farming of each household</li> </ul>	Relatedness
<ul style="list-style-type: none"> <li>Format is made as simple as possible</li> </ul>	<ul style="list-style-type: none"> <li>Farmers understand the contents and fill in the format without difficulties</li> </ul>	Competence
<ul style="list-style-type: none"> <li>Literate farmers help illiterate farmers in filling the format</li> </ul>	<ul style="list-style-type: none"> <li>Illiterate farmers understand the contents and fill in the format without difficulties</li> </ul>	Relatedness

### Implementation Procedures

- Extension staff explain about the objectives. They distribute the baseline survey formats to FG members and explain how to fill them.
- FG members take the format to their home and fill in the form with their partner in farming. They calculate the planted area, production and sales volume, gross income, cash cost, gross profit of their vegetable crops last year.
- Next day, extension staff hold a meeting to collect the filled formats. Extension staff and literate FG members help those who have not filled the formats properly.

- D. Extension staff take photographs of the filled formats for copies in the office as a reference for their future extension services. The original formats should be returned to FG members. The filled baseline survey formats will be later compared with endline survey results by farmer themselves for their learning.

### Box 3 “Home assignment” system during baseline surveys

#### Why?

Extension staff found that many of the farmers did not have figures, such as production costs and sales amounts at hand during the baseline survey. They needed to go home to check their record or to ask their family members to get accurate figures. Finishing the baseline survey on the spot in a day's gathering was difficult.

#### How?

Extension staff organized two-day sessions for the baseline survey. First day, the Extension staff explained to farmer group members of the purpose of the Baseline Survey and what data are required to fill the format. As it was difficult for most of the farmers to fill the format on the spot, the Extension staff asked the members to fill the format at home in consultation with their notebooks and other family members. On the second day, the Extension staff collected the filled formats from the members, and after taking their pictures, the Extension staff gave back all the formats to the members.



#### Results?

More accurate and reliable data were collected. All the family members, including husbands and wives, worked together to understand the current situation of their farming as income source, thereby the Baseline Survey contributed to raise interests of all the family members in the current balance between income and costs incurred by their vegetable production.

### **Formats**

The following figures are samples of baseline survey questionnaire formats. Two types of formats need to be filled out by the farmers.

उत्पादन र आमदानी विश्लेषण तथ्याडक फारम

मिति: \_\_\_\_\_ नगरपालिका/गाउँपालिका: \_\_\_\_\_

समुहको नाम: \_\_\_\_\_

सदस्यको नाम: \_\_\_\_\_

लिंग: महिला/पुरुष जाती: ब्राह्मण/क्षेत्री / जनजाति / दलित/ अन्य मोबाइल नं: \_\_\_\_\_

आफु सँगै बस्ने परिवारको सदस्यको संख्या: \_\_\_\_\_

आफु सँगै खेतबारीमा काम गर्ने परिवारको सदस्यको संख्या: \_\_\_\_\_

### १. कृषि आमदानी

१.१ तपाईंको परिवारले गएको बर्ष (२०७३ माघ देखि २०७४ पुष) मा कुन कुन बाली खेती गर्नु भयो?

क्र. ताजा तरकारीहरू (बालु,ताजा मसला बालीहरू समेटेने, तर बहुबर्षे बाली जस्तै जुनार, बलैचि नसमेटेने )

क्र.स.	२. बालीको नाम र जातहरू	३. रोप्ने देखि टिप्ने समय	४. बाली लगाएको क्षेत्रफल		५. जम्मा उत्पादन (किलो)	६. जम्मा क्षेत्रको उत्पादन	७. विप्री रकम (रु)	८. उत्पादन लागत			९. जम्मा लागत खर्च (रु+ख+ग)	१०. शुद्ध आमदानी	
			संख्या	एकरी (रोपनी/बाना/बर्ग मिटर)				क. कृषि सामग्री (बिउ, रसायनिक मल, विषादी)	ख. ज्यालादारी ज्यामी खर्च	ग. अन्य (हुवापी, जग्गा भाडा)			
१	गोलमेडा(खुला) जात:	देखि _____ सम्म _____											
२	गोलमेडा (टनेल) जात:	देखि _____ सम्म _____											
३		देखि _____ सम्म _____											
४		देखि _____ सम्म _____											
५		देखि _____ सम्म _____											
६		देखि _____ सम्म _____											
७		देखि _____ सम्म _____											
८		देखि _____ सम्म _____											
९		देखि _____ सम्म _____											
१०		देखि _____ सम्म _____											
	जम्मा												



१.२ के तपाईले आफ्नो बालीको आम्दानी/खर्चको विवरण राख्ने गर्नु भएको छ ?

छ /  छैन

१.३ के तपाईले खेती गर्नु भन्दा अगाडि खेती योजना बनाई उत्पादन, खर्च, बिक्रि र आम्दानीको बाली अनुशार अनुमान गर्नु हुन्छ ?

छ /  छैन

१.३ के तपाईले बाली बेचिसके पछि लागत खर्च र आम्दानी हिसाब गर्नु हुन्छ ?

छ /  छैन

## २. खेती प्रविधि

२.१ के तपाईले गएका वर्षमा तरकारी उत्पादन गर्दा निम्न किसिमका प्रविधिहरु अपनाउनु भएको छ ?

### क. जग्गाको तयारी र नर्सरी बनाउनु

- तपाईले नर्सरीमा बिउ कसरी रोप्नु हुन्छ ?

छर्ने /  रेखा/धर्सा बनाएर रोप्ने /  प्लास्टिकको थैलामा(polybag) रोप्ने

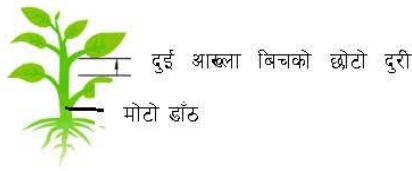
- के तपाईले नर्सरी बनाउनु हुन्छ ?

छ /  छैन

- तल दिएको चित्र मध्य तपाईलाई कुन बेर्ना राम्रो हो जस्तो लाग्छ (क अथवा ख) ?

क

ख



- के तपाईले बेर्ना सार्नु भन्दा पहिले रोप्ने दुरी नाप्नु हुन्छ ?

छ /  छैन

### ख. मल बनाउने

- के तपाईले मल तयार गर्दा पराल अथवा सुख्खा घास मिसाउने गर्नु हुन्छ ?

छ /  छैन

- के तपाईले मललाई घास अथवा प्लास्टिकले छोप्ने गर्नु हुन्छ ?

छ /  छैन

- के तपाईले मललाई पल्टाउने गर्नु हुन्छ ?

छ /  छैन

- तपाईको विचारमा मल तयार हुन कति महिना लाग्छ ? (सालाखाला)

१  २  ३  ४  ५  ६  
अन्य ( )

### ग. रोगकिरा नियन्त्रण

- तपाईले रोगकिरा कसरी नियन्त्रण नियन्त्रण गर्नु हुन्छ ? (धेरै कोठामा चिन्ह लगाउन सक्नु हुन्छ)

किटनाशक/  हुसीनाशक /  भारपातनाशक/  
 मोहनी पासो /  स्थानिय सामग्री /  
 अन्य ( )

- तपाईले एउटा बालीमा कति पटक बिषादी छर्नु हुन्छ ?

( ) पटक / (हप्ता / महिना / मौसमी)

- के तपाईले बिषादी छर्नु भन्दा अघि सुफाब अनुशार बिषादीको मात्रा नाप्नु हुन्छ ?

छ /  छैन

- के तपाईले आफ्नो खेतीमा बाली चक्र अपनाउनु भएको छ ?

छ /  छैन

### घ. पोस्टहाबेष्ट व्यवस्थापन

- तपाईले बाली टिपिसके पछि के गर्नु हुन्छ ? (धेरै कोठामा चिन्ह लगाउन सक्नु हुन्छ)

धुने/  छान्ने /  ग्रेडिड गर्ने /  मुठा पार्ने /  
 प्याक गर्ने/  अन्य ( )

- बजारमा तरकारी पठाउदा कसरी पठाउनु हुन्छ ?

सबै मिसाएर /  आकार अनुसार /  गुणस्तर अनुशार/  
 बजारको माग अनुशार

## ३. बजारीकरण

३.१ तपाईले तरकारी बेच्दा, नियमित कति जना ब्यापारीसग सम्पर्क गर्नु हुन्छ ?

१ /

२ /

३ /

४ /

५ भन्दा बढि

हामीले परिवारको सदस्यहरु बिच छलफल गरेर यो फारम भरेका छौ ।

समूहको सदस्यको नाम: \_\_\_\_\_

परिवारको सदस्यको नाम: \_\_\_\_\_

मिति: \_\_\_\_\_

समूह सदस्यको सम्बन्ध भएको व्यक्तिको हस्ताक्षर: \_\_\_\_\_

## 2.5 Study Tour

Four Steps	Activities
1. Farmers understand the goal	- CAP Approach Workshop
2. Farmers' awareness is raised	- (Optional) Matching Forum - Market Survey by Farmers - (Optional) Farmer Supplier Interaction Workshop - Participatory Baseline Survey - <b>Study Tour</b>
3. Farmers make decision	- Action Plan Making (Crop Selection, Crop Calendar Making & Resource Mobilization)
4. Farmers acquire skills	- On-site Coaching
Follow-up and monitoring (including Participatory Endline Survey)	

We are here.

### Objectives

Study Tour aims to enhance farmer group members' awareness and motivation about commercial vegetable production and marketing. If it is conducted in the second year, it further provides opportunities to enhance farmer group members' skills and knowledge about commercial vegetable production and marketing.

In an option, Study Tour can be conducted with other FGs at same level of target FGs depending on the technical skill level of the FG members and the budget availability of Local Governments etc. It is like a farmer to farmer approach for learning from others, and it enhances both FGs' motivation such as relatedness and autonomy.

### Outline

Representatives of farmer group members visit advanced areas in commercial vegetable production/other FG's areas, observe its farming and marketing practices and interact with its farmers. After the Study Tour, they share and discuss with fellow farmers about what they have learned and how they can apply to their farming.

### Key Implementation Tips, Effects, and Enhanced Motivation

Tips	Effects	Motivation
<ul style="list-style-type: none"> <li>Both women and men participate in study tour</li> </ul>	<ul style="list-style-type: none"> <li>Lessons can be drawn from different point of views having both women and men participants. For instance, not only lessons to improve profitability but also those to save workload and time can be learnt</li> </ul>	Relatedness Competence
<ul style="list-style-type: none"> <li>Several groups travel together as a group for specific crops / farming methods</li> </ul>	<ul style="list-style-type: none"> <li>Farmers learn more effectively through observations and discussions with fellow farmers who are interested in similar crops and/or farming methods such as tunnel tomato farming</li> </ul>	Relatedness Competence
<ul style="list-style-type: none"> <li>Farmers have free time for observation and discussions</li> </ul>	<ul style="list-style-type: none"> <li>Each participant can have a time to learn from advanced farmers and fellow farmers by interacting them based on personal interests</li> </ul>	Autonomy Relatedness



## Implementation Procedures

- A. Extension staff select and pre-arrange where to visit and whom to meet.
- B. Extension staff help farmer group members select representative farmers (2 women and 2 men) who are willing to share information obtained during the Study Tour with their fellow farmers.
- C. Extension staff and representative farmers from several farmer groups visit advanced areas together.
- D. Extension staff help farmer representatives observe the fields and make inquiry to the farming by using the Study Tour Check List shown below or the corresponding page of the Farm Management Notebook.
- E. Extension staff help farmer groups hold a feedback session where the representatives share and discuss with fellow farmers about what they have learned and how they can apply lessons to their farming practice.

### Box 4 Study Tour

#### Why?

Some farmer group members did not have enough skills and knowledge in market-oriented agriculture, but they did not have either a clear image of market-oriented horticulture, as there is no good example nearby.

#### How?

“Seeing is believing”. CAP offered farmer group the opportunity of the study tour to the progressive horticultural farming areas such as Dhading District. Those representatives selected by each of FGs participated in the tour, and after the tour, they shared what they had learnt through the tour with other FG members.



#### Results?

Most of FGs that had sent their representatives to the Study tours experienced a significant improvement in their vegetable production by applying those farming and marketing techniques learnt through the tours.

For instance, the Alike fruit production farmer group of Dhulikhel Municipality experienced a significant increase in their tomato production by applying the techniques of pruning, mulching, and eliminating extra leaves as advanced farmers were doing. One of the FG members said, "There is no comparison in the results between now and 2 years ago. It's like a black and white!"

## Formats

Here is a sample of checklist for farmers in Study Tour.

नोट	
• नर्सरी :	
• खाद्द तत्व व्यवस्थापन :	
• रोग किरा ब्यवस्थापन :	
• सिचाइ :	
• बजारीकरण :	
• अन्य :	

### 3. Step 3- Farmers Make Decision

After the raising the awareness of farmers in Step 2, the farmers move on to the next step, Step 3, where they make important decisions (Action Plan Making) on their horticultural businesses. The decisions to be made are: what crops to grow at what time, in what quantity and quality, and so forth. Those decisions should be made based on group consensus formed through discussion among members. Extension staff's role is not to make decisions for the farmers, rather, to help farmers to make the right decisions by providing appropriate guidance and expert knowledge on agriculture.

#### 3.1 Action Plan Making (Crop Selection, Crop Calendar Making & Resource Mobilization)

Four Steps	Activities
1. Farmers understand the goal	- CAP Approach Workshop
2. Farmers' awareness is raised	- (Optional) Matching Forum - Market Survey by Farmers - (Optional) Farmer Supplier Interaction Workshop - Participatory Baseline Survey - Study Tour
3. Farmers make decision	<b>- Action Plan Making (Crop Selection, Crop Calendar Making &amp; Resource Mobilization)</b>
4. Farmers acquire skills	- On-site Coaching
Follow-up and monitoring (including Participatory Endline Survey)	

We are here.

#### Objectives

The farmer group members and their business partners together make their annual action plan by selecting the target crops, developing the cropping calendars, and identifying necessary inputs and their sources.

#### Key Implementation Tips, Effects and Enhanced Motivation

Tips	Effects	Motivation
<ul style="list-style-type: none"> <li>Extension staff help but let farmers decide on their own by voting and consensus with prepared formats in brown paper</li> </ul>	<ul style="list-style-type: none"> <li>Farmers make decisions on what, when and how to crop</li> <li>Farmers are able to select crops on their own based on results of market surveys and of analysis of their circumstances and capacity</li> <li>Democratic process is ensured</li> </ul>	Autonomy Competence Relatedness

Tips	Effects	Motivation
<ul style="list-style-type: none"> <li>Extension staff gives useful advice in agro-ecological suitability of specific crops</li> </ul>	<ul style="list-style-type: none"> <li>Technically or scientifically correct decisions can be made by farmers.</li> </ul>	Competence
<ul style="list-style-type: none"> <li>Extension staff are provided with <b>Anchoko</b> (a cheat sheet) for the whole procedure</li> </ul>	<ul style="list-style-type: none"> <li>Farmers understand the whole procedure better through the clear explanation</li> </ul>	Competence

### Implementation Procedures

- A. Extension staff prepare budget and materials for this workshop and arrange an appropriate date for their farmers.
- B. This workshop should be conducted with steps which are shown in following table.

Step	Topic	Description	Advice to the facilitation
1	<b>Introduction</b>	Extension staff explain the objectives of crop selection and crop calendar making	Try to give farmers a big picture and the destination of the workshop clearly in a short message.
2	<b>Current crops</b>	Let the participants (members and their business partners of the same household) name the major crops grown in their fields to confirm them and their performance	N/A
3	<b>Market survey</b>	Let the market survey representatives share the results of all the crops with the clarification of high price seasons	Let the representatives clarify possible sales prices of crops every month
4	<b>Opportunities and favorable factors</b>	Let the participants share information on available opportunities and favorable factors for their commercial agriculture (such as subsidies, grants, new infrastructure planned to be established, etc.)	Extension staff and observers from ward committee or local government may also share useful information such as subsidies, grants, etc. from their sides
5	<b>Nominating target crops</b>	Let the participants nominate target crops by considering market potential and the participants' experiences	Let the participants take into account the opportunities and favorable factors and technical and agroecological feasibility points of view from extension staff
6	<b>Voting</b>	Let the participants vote and select 2 crops for the dry season and 2 crops for the rainy season tentatively.	N/A

Step	Topic	Description	Advice to the facilitation
7	<b>Checking feasibility</b>	Let the participants discuss the characteristics and issues on the selected 4 crops to assess their feasibility.	Let those experienced farmers among the participants explain characteristics and issues of each of the 4 crops. Also let other less-experienced farmers raise their worries and questions.
8	<b>Final crop selection</b>	Let the participants take those feasible crops as target crops and replace those unfeasible crops with other feasible crops.	N/A
9	<b>Declaring commitment of cropping area</b>	To facilitate the participants to declare, this exercise can be done by dividing the participants into small groups.	If there is any participant who cannot commit any area, leave them to consult with their partners.
10	<b>Possible total sale</b>	Estimate the possible total sales of each of the target crops by calculating from the total committed areas, estimated yields and estimated sales prices.	Sum up sales per household and add them up on a brown paper to show the total sales to all the participants.
11	<b>Resource mobilization planning</b>	Let the participants plan how to procure all the inputs and investment required to cultivate each of the target crops	Let the participants agree who does what by when and how.
12	<b>Approval</b>	Let the participants approve the plan made through the workshop as their group's action plan	The original plan should remain with FG, while a copy should be submitted to the local government through the Extension staff in charge

#### Column 4 Examples of Action Plan Making Benefit

##### **Collective crop selection:**

FGs used to cultivate individually. After applying the CAP Approach, they discussed and selected varieties that will bring profit to them. They produce individually but if they produce same crop, they can market it collectively and solve issues during cultivation. Farmer groups became to select those core crops in the Action Plan Making process.



##### **Need based support:**

SRC-CAP Project provided financial support as part of the project activities based on the farmers' needs. With 50% group contribution, FGs on their own had to purchase and manage agriculture input or infrastructure items. In Sindhuli, they purchased pump for lift irrigation. Then, they are cultivating vegetables with year-round irrigation in 150 ropani, which allowed them to shift cropping pattern from cereal crops to vegetables. [Sunkoshi RM, Sindhuli]



## Box 5 *Anchoko* (a cheat sheet / a checklist) for efficient implementation and better understanding

**Anchoko** is a Japanese word meaning a concise set of notes used for quick reference. CAP developed **Anchoko** for many farmer activities with which the extension staff can explain contents clearly in a set order.

### WHY?

- When implementing complicated activities such as Action Plan Making for the first time, the extension staff are often confused about the right order of its sub-steps.
- The extension staff, therefore, often end up with struggling in implementing activities in the field.

### How?

- The extension staff use *Anchoko* before implementing farmer activities to learn about necessary sub-steps and orders.
- The extension staff use *Anchoko* during the implementation of farmer activities.



Steps of Action Plan Making		
Topic	Description	Remarks
1	<b>Introduction</b> The facilitator explains the objective of Action Plan Making.	Try to give farmers a big picture and the destination of the workshop clearly in a short message.
2	<b>Current crops</b> Let farmers raise current major crops to confirm their actual experience and performances so far	
3	<b>Market survey</b> Let the representatives to share the results of the market survey crop by crop, checking high price seasons	Let the presenters to clarify possible price and months crop by crop
4	<b>Nominating target crops</b> Let farmers nominate target crops, considering market potential and farmers experiences	Let farmers nominate freely but also focusing on crops referred in the current crop session and market survey presentation
5	<b>Voting</b> Let farmers vote and decide 2 crops for rainy season and 2 crops for dry season tentatively.	
6	<b>Checking feasibility</b> Let farmers discuss characteristics and issues on the 4 crops to check their feasibility as target crops.	Let experienced farmers contribute to raising characteristics and issues. Also let less-experienced farmers raise their simple worry and questions.
7	<b>Final crop selection</b> If a crop is feasible, let farmers decide the crops finally. If a crop is not feasible, let them select an alternative crop	
8	<b>Individual production area</b> Form 3, 4 sub-groups and let farmers express land allocation for each selected crop	If some farmers may not able to commit production area, leave it blank and ask him/her to consult with family members
9	<b>Possible total sale</b> Show whole possible sale from total committed lands based on possible lowest unit price	Sum-up total figures quickly and write the final figure clearly on the brown paper.
10	<b>Issues and solutions</b> Let farmers discuss issues and possible solutions considering Rs. 200,000 financed by SRC-CAP.	At first, explain about the basics of Rs.200,000 support including 50% self contribution.
11	<b>FSIWS information</b> Let representatives introduce information acquired in FSIWS as referential information for solutions	If representatives explain limited variety of items, the facilitator should introduce other items supplementally.
12	<b>Financial support</b> Let farmers discuss financial support items. Final decision can be made later.	
13	<b>Slogan</b> Ask farmers set a couple of slogans either on (1) Technology (2) Marketing (3) Group management/GESI to solve the problems to realize the possible sale.	Show examples of slogans such as "Every member participates in the training" "Increase market channels" "Try collective purchase of inputs"

### Results?

- The extension staff can implement farmer activities smoothly and efficiently.
- Farmers can understand extension messages better through the implementation of well-ordered sub-steps in farmer activities.



## Formats

Here are several formats for Action Plan Making.

### बजार सर्वेक्षणको फारम

व्यापारीको नाम र सम्पर्क नं.	लक्षित तरकारी र जात	अत्याधिक माग हुने समय (महिना)	मुल्य (रु./केजी)	परिमाण (केजी) र आपूर्ति (दैनिक/साप्ताहिक इत्यादी)		व्यापारीबाट अपेक्षा	समुहबाट तरकारी लिन डिलरको इच्छा
				/दिन	/दिन		
				/हप्ता	/हप्ता		छ/छैन
				/महिना	/महिना		छ/छैन
				/दिन	/दिन		छ/छैन
				/हप्ता	/हप्ता		छ/छैन
				/महिना	/महिना		छ/छैन
				/दिन	/दिन		छ/छैन
				/हप्ता	/हप्ता		छ/छैन
				/महिना	/महिना		छ/छैन
				/दिन	/दिन		छ/छैन
				/हप्ता	/हप्ता		छ/छैन
				/महिना	/महिना		छ/छैन

### छनौटको लागी फारम

अनुभव	सम्भावना	जम्मा	छनौट

अर्को पाना

## Crop Selection from Market Survey Results

सिन्धुली सडकखण्ड व्यावसायिक कृषि प्रबर्धन आयोजना						
समुहको उत्पादन योजना, २०७५/०६(२०१९)						
उत्पादक समुहको नाम:	२		३	नपा/गापा:		
लक्षित बजारहरू, १	२	३	४	५	६	
विवरण	बाली १	बाली २	बाली ३	बाली ४	बाली ५	
छनौट गरेको तरकारी बाली						
जातहरू						
लक्षित उत्पादन परिमाण(किलो)						
तरकारी बाली टिप्ने समय (सठ र अन्तिम मिति)						
क.स. उत्पादक सदस्यको नाम	बाली लगाउने ठे. (रोपनी, आना)	बाली लगाउने ठे. (रोपनी, आना)	बाली लगाउने ठे. (रोपनी, आना)	बाली लगाउने ठे. (रोपनी, आना)	बाली लगाउने ठे. (रोपनी, आना)	पत्येक घरघुरीले छेती गर्ने जम्मा क्षेत्रफल(रोपनी)
१						
२						
३						
४						
५						
६						
७						
८						
९						
१०						
११						
पत्येक बालीको जम्मा क्षेत्रफल						

## Individually Committed Crop Areas and the Total Areas of Selected Crops

यो उदाहरणमा गोलभेडा र करेलाले समाज भोट प्राप्त गरेका छन् । कृषक समुह सदस्यहरूले छलफल गरी २ मध्ये १ बाली छनौट गर्नु पर्नेछ ।

उदाहरण:

बाली	अनुभव	सम्भावना	जम्मा	छनौट
गोलभेडा	३	२८	३१	○
बन्दा	१५	१७	३२	○
लसुन	१७	१०	२७	
करेला	१५	१६	३१	

प्रत्येक कृषक समुह सदस्यले अनुभव भएका सम्पूर्ण बाली लाई भोट गर्छन् ।

प्रत्येक कृषक समुह सदस्यले यो सिजन/ आउने सिजन खेती गर्न चाहेको २ बालीलाई भोट गर्छन् ।

अन्तिममा कृषक समुह सदस्यहरू ले भोटिङको नतिजा र छलफललाई मध्यनजर गरी २ लक्षित बाली छनौट गर्छन् ।

### How to vote in Crop Selection

#### खेती पात्रोको फारम

उदाहरण:

बस्ति	तामाघाट				
उचाई:	९०० मी.				
साईटको कृषि पर्यावरणिय क्षेत्र:	उच्च पहाड	मध्य पहाड	बेसी		

बाली	जग्गाको किसिम	Mid Jan.- Mid Feb.	Mid Feb.- Mid Mar.	Mid Mar.- Mid Apr.	Mid Apr.- Mid May	Mid May- Mid Jun.	Mid Jun.- Mid Jul.	Mid Jul.- Mid Aug.
		माघ	फागुन	चैत्र	बैशाख	जेठ	असार	श्रावण
		१ २ ३ ४	१ २ ३ ४	१ २ ३ ४	१ २ ३ ४	१ २ ३ ४	१ २ ३ ४	१ २ ३ ४
गोलभेडा	खुल्ला	N N N S S S		TP T P T P			H H H H H H	
करेला	खेत		N N S S		TP T P T P T P		H H H H H	

(नोट) नर्सरी/ रोप्ने: NS, सार्ने: TP, टिप्ने: H

### Crop Calendar Format

## 4. Step 4- Farmers Acquire Skills

Step 4 is the next step of the CAP Approach where the farmers are equipped with necessary knowledge and skills to produce crops in response to the market demand. By this time, the farmers' willingness to learn new knowledge should be high since they are already convinced of the market opportunities of the target crops, they have selected. The contents of the technical training should be specifically catered to the farmers' needs so that they can immediately adopt and apply the technologies in their farming practice. In other words, making the training demand-driven, as opposed to supply-driven, is the key to success.

### 4.1 On-site Coaching

Four Steps	Activities
1. Farmers understand the goal	- CAP Approach Workshop
2. Farmers' awareness is raised	- (Optional) Matching Forum - Market Survey by Farmers - (Optional) Farmer Supplier Interaction Workshop - Participatory Baseline Survey - Study Tour
3. Farmers make decision	- Action Plan Making (Crop Selection, Crop Calendar Making & Resource Mobilization)
4. Farmers acquire skills	- <b>On-site Coaching</b>
Follow-up and monitoring (including Participatory Endline Survey)	

We are here.

### Objectives

A series of On-site Coaching are designed to disseminate skills and knowledge necessary for the target crops which the farmers have chosen. **It is a demand-driven training.**



## **Key Implementation Tips, Effects and Enhanced Motivation**

<b>Tips</b>	<b>Effects</b>	<b>Motivation</b>
<ul style="list-style-type: none"> <li>Extension staff allow Farmer Groups select their Training Farm which is used as a coaching venue</li> </ul>	<ul style="list-style-type: none"> <li>Farmers make decisions on the location of Training Farm among the members which is conveniently located for training</li> </ul>	Autonomy
<ul style="list-style-type: none"> <li>Extension staff allow Farmer Groups to select the topic of coaching as much as possible</li> </ul>	<ul style="list-style-type: none"> <li>Farmers learn practical skills such as sowing, transplanting, diagnosing pests, applying pesticides, etc. and become confident in farming</li> </ul>	Competence
<ul style="list-style-type: none"> <li>Extension staff organise the coaching at their Training Farm in cooperation of external specialists and resource persons</li> </ul>	<ul style="list-style-type: none"> <li>Farmers and their business partners from the same household jointly receive coaching and have discussions at Training Farm</li> </ul>	Relatedness
	<ul style="list-style-type: none"> <li>Farmers obtain connection with external specialists and resource persons</li> </ul>	

### **Implementation Procedures**

#### **Training Farm establishment**

Extension Staff facilitate the farmer group members and their business partners from the same households to agree where to establish their training farm. The owner of land for the training farm may be responsible for the management of the crops on the training farm, while all the inputs and technical advice can be provided by the Extension staff. It is recommendable that the training farm has at least 0.25 ropani (4 ana) for the 2 target crops.

#### **Technical advice**

Extension staff provide necessary technical advice on how to prepare the training farm.

Extension staff agree with the farmer group members and their partners on the topics to be addressed on the target crops and the timing of coaching by topic through the on-site coaching (demand-driven training). The following 4 topics are at least selected and addressed in the on-site coaching per season: (1) Compost Making, (2) Nursery Making and Transplanting; (3) Plant Protection, and (4) Post-Harvest Handling and Marketing.

Extension staff give the farmer group members and their partners the on-site-coaching for those agreed topics on the training farm with the provision of basic inputs for the training, such as seeds and fertilizers. The on-site coaching should be always composed of the technical explanation part and the practice part.

When necessary, extension staff invite other specialists or resource persons who may give technical support to the staff in the on-site coaching.

For more information, refer to “Compost Making”, “Nursery Making and Transplanting”, “Plant Protection” and “Post-Harvest Handling and Marketing” in PART 4 of this Handbook.

## Box 6 On-site Coaching

### Why?

Farming techniques should be instructed in the real situations in farmers' fields. How to practice farming techniques can be understood by farmers when it is shown not only by words but also by practices. When extension officers teach a couple of members, the information tends to remain to the members that received from extension officers directly. Thus, SRC-CAP Project had prepared a "showcase" called Training Farm.

### How?

SRC-CAP Project offered On-site Coaching through a small plot called Training Farm in the fields of a member of the farmer group and offered training there calling all farmer members. Topics included nursery management, pest and disease management, post-harvest handling etc.

### Results?

Gaumati Farmers Group of Kamalamai Municipality, Sindhuli, that has nearly 9-year experience of vegetable farming for self-consumption, found the On-site Coaching very useful. They claimed that they had learned through the On-site Coaching, especially on plant spacing, proper application of fertilizers and pesticides, identification and treatment of pest and disease. They also found the pest and disease management manual given in the On-site Coaching is helpful, and with the manual they can identify pest and disease and take necessary measures even when Extension staff are not available



## 5. Follow up and Monitoring (including Participatory Endline Survey)

Four Steps	Activities
1. Farmers understand the goal	- CAP Approach Workshop
2. Farmers' awareness is raised	- (Optional) Matching Forum - Market Survey by Farmers - (Optional) Farmer Supplier Interaction Workshop - Participatory Baseline Survey - Study Tour
3. Farmers make decision	- Action Plan Making (Crop Selection, Crop Calendar Making & Resource Mobilization)
4. Farmers acquire skills	- On-site Coaching
<b>Follow-up and monitoring (including Participatory Endline Survey)</b>	

We are here.

### Objectives

Follow-up and monitoring visits to the target farmers aim at ensuring farmers' actual application of taught techniques and knowledge. The visits not only look at farmers' production practices but also assess their progress of marketing and other collective work as a group.

### Outline

Follow-up and monitoring visits are to be conducted periodically to ensure that the farmers are applying the knowledge they have learned during the CAP trainings. The implementers also monitor the progress of activities described in the groups' Crop Calendars. After a certain period, the Participatory Endline Survey is conducted using almost the same survey formats as the Participatory Baseline Survey. The data obtained by the survey is analysed for the purpose of comparison with the results of the Baseline Survey.

### Key Implementation Tips, Effects, and Enhanced Motivation

Tips	Effects	Motivation
<ul style="list-style-type: none"> <li>Both women and men receive follow-up and monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Both women and men learn and understand cultivation techniques, workload, etc.</li> </ul>	Relatedness Competence
<ul style="list-style-type: none"> <li>Farmers are provided with their own baseline survey results</li> </ul>	<ul style="list-style-type: none"> <li>Farmers can compare the results of endline and baseline surveys with the help of extension staff</li> </ul>	Competence
<ul style="list-style-type: none"> <li>Literate farmers help illiterate farmers in filling endline format</li> </ul>	<ul style="list-style-type: none"> <li>Illiterate farmers understand the contents and fill in the format without difficulties</li> </ul>	Relatedness

## **Implementation Procedures**

- A. Extension staff and the implementation team visit the farmer groups periodically to give advice and monitoring the progress of activity implementation.
- B. The procedures of endline survey are that of baseline survey plus comparison as follows. Extension staff explain about the objectives. They distribute the baseline survey formats to FG members and explain how to fill them.
- C. FG members bring the format to their home and fill in the form with family members (partners). They calculate the planted area, production and sales volume, gross income, cash cost, gross profit of their vegetable crops last year.
- D. Next day, extension staff hold a meeting to collect the filled formats. Extension staff and literate FG members help those who have not filled the formats properly.
- E. Extension staff provide each farmer group member with their results of baseline survey conducted 2 years ago. Then, they tell them to compare them with the results of endline survey just produced. Extension staff help them go through the comparison one by one, showing the changes and improvements the farmers made in the last 2 years.

## **Formats**

The endline survey questionnaire forms are the same as baseline survey questionnaire forms which are shown in “2.1 Participatory Baseline Survey” in PART 2.

# PART 3. EXPERIENCES

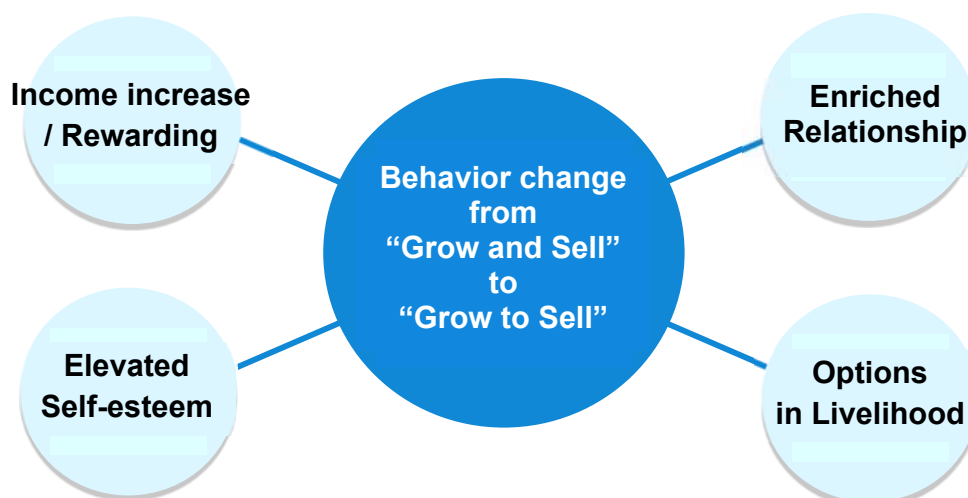
“PART 3 EXPERIENCES” provides experiences of SRC-CAP Project which is useful for the implementation of the CAP Approach

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# 1. Benefits of CAP Approach

Experiences suggest that vegetable extension through CAP Approach has changed the behaviors of farmers in farming. The shift from “grow and sell” to “grow to sell” has increased income as well as 4 other benefits: (1) options in Livelihood, (2) elevated self-esteem, (3) strengthened relationship, and (4) rewarding experiences.



## Changes-1: Income increase/ Rewarding

- **Earning is Fun:** After getting profit from the vegetable cultivation, farmers (mostly women) became excited to engage in farming. They wanted to cultivate more vegetables to get more MONEY!
- **Bought a gold chain for myself:** In many cases, profit remained in the hands of the farmer who cultivated. Some female farmers bought a gold chain for herself. By seeing the member purchasing expensive goods, other members also got motivated.



## Changes-2: Options in Livelihood

- **Changing occupations:** After realizing that vegetable farming brings profit. Some farmers left their office job/traditional occupation and decided to concentrate as vegetable farmer.
- **Asset building:** From the sales of the vegetable, many farmers have invested to agriculture inputs such as plastic tunnels, seeds and even bought motorcycle, television and renovated a house that was destroyed by the earthquake.
- **Savings for future:** Some farmer opened a savings account at the cooperative and have started to save for education, health care and ceremonies.





### Changes-3: Elevated Self-esteem

- **Dignity:** Before the project, women had to “request” her husband for money when necessary. Now, they are economically independent.
- **Leadership:** At the beginning, some participants were shy and hesitated to share their ideas in a mass meeting. Through the project activities, they developed a leadership and negotiation skills. They feel more confident in themselves.
- **Motivation as a commercial farmer:** While growing cereal crops, farmers did not monitor the field every day. Now they go and check the growth of vegetables every day, because it is an important source of income.



### Changes-4: Strengthened Relationship

- **Relation within households:** Before the project, decisions in farming were mostly made by men, but now collective decision are made between within the household, and benefit is equally shared.
- **Relation with JT/JTAs:** Before the project, farmers did not know who JT/JTAs were. Now, farmers consult with JT/JTAs whenever they have a problem.
- **Relation with buyers:** Farmers did not have a good relationship with buyers. Now, they share market information and production status, so that both parties can benefit.
- **Relation with other actors:** Now farmers have an expanded network with the Local Government Offices, AKC, Agro-vets, Ward Chairperson, restaurants etc.





## 2. Selection of CAP Approach Activities

From the experiences of SRC-CAP Project, it is recommended to conduct all the Activities of 4 Steps of CAP Approach at least once in the beginning and repeat some of them later on within the assistance period of 2 years. In this way, farmers can go learn farming and marketing in the first year and improve them in the second year. There might be, however, instances that all these activities cannot be conducted due to resource constraints, and other options might be necessary. For this purpose, the following 2 options are prepared such as (1) a full package option, and (2) a minimum package option. In these options, one year of assistance period consists of 2 crop seasons, and a total of 4 crop seasons in 2 years are assisted by CAP Approach. This is for a management purpose only, although it is recognized that this is often not the case in reality and 1 crop season or 3 crop seasons is possible in a year.

### 1.1 Full package

The full package option which was actually conducted in SRC-CAP Project is shown in the following table. From the experiences of SRC-CAP, this is the most effective way through which farmer groups can learn to become market-oriented farmers. In this option, all the Activities (including optional ones) are conducted in the First Crop Season in the Year 1. Some of the options, however, are repeated but others not in the subsequent Crop Seasons. The reasons are as follows. On-site Coaching (Plant Protection) is repeated in every crop season because it is the most demanded assistance by many farmer groups. Follow up and monitoring is also repeated in every crop season to ensure farmers reflect their past activities and learn from them. Action Plan Making is repeated in every crop season, though there are only some revision and modification on crops in the second and fourth crop seasons. Market Survey is repeated in the second year to ensure that many more farmers in the farmer groups conduct Market Survey by themselves.

Four Steps	Activities	Cost (Rs/group)
<b>Year 1: 1st Crop Season (all activities are conducted)</b>		
1. Farmers understand the goal	- CAP Approach Workshop	6,000
2. Farmers' awareness is raised	- (Optional) Matching Forum	12,900
	- Market Survey by Farmers	20,850
	- (Optional) Farmer Supplier Interaction Workshop	12,850
	- Participatory Baseline Survey	2,950
	- Study Tour	37,350
3. Farmers make decision	- Action Plan Making (Crop Selection)	3,650
	- Action Plan Making (Calendar Making)	3,650
	- Action Plan Making (Resource Mobilization)	3,650
4. Farmers acquire skills	- On-site Coaching (Compost Making)	9,500
	- On-site Coaching (Nursery Making and Transplanting)	9,500
	- On-site Coaching (Plant Protection)	9,500
	- On-site Coaching (Post-Harvest Handling and Marketing)	9,500

Follow-up and monitoring (including Participatory Endline Survey)		2,950
<b>Year 1: 2nd Crop Season</b>		
3. Farmers make decision	- Action Plan Making (Revision on Crop Selection) - Action Plan Making (Revision on Calendar Making)	3,650 3,650
4. Farmers acquire skills	- On-site Coaching (Nursery Making and Transplanting) - On-site Coaching (Plant Protection) - On-site Coaching (Post-Harvest Handling and Marketing)	9,500 9,500 9,500
Follow-up and monitoring (including Participatory Endline Survey)		2,950
Financial support for 1 <sup>st</sup> year	50% of Action Plan	200,000
<b>Year 2: 3rd Crop Season</b>		
2. Farmers' awareness is raised	- Market Survey by Farmers - Study Tour	20,850 37,350
3. Farmers make decision	- Action Plan Making (Crop Selection) - Action Plan Making (Calendar Making) - Action Plan Making (Resource Mobilization)	3,650 3,650 3,650
4. Farmers acquire skills	- On-site Coaching (Plant Protection)	9,500
Follow-up and monitoring (including Participatory Endline Survey)		2,950
<b>Year 2: 4th Crop Season</b>		
3. Farmers make decision	- Action Plan Making (Revision on Crop Selection) - Action Plan Making (Revision on Calendar Making)	3,650 3,650
4. Farmers acquire skills	- On-site Coaching (Plant Protection)	9,500
Follow-up and monitoring (including Participatory Endline Survey)		2,950
Financial support for 2 <sup>nd</sup> year	50% of Action Plan	200,000
Total (Rs/group)		690,900

## 1.2 *Minimum package*

The minimum package option is shown in the following table for those implementers with constraints with resources such as manpower and budget. From the experiences of SRC-CAP, this is the minimum from which an essence of CAP Approach is passed on to farmer groups.

Four Steps	Activities	Cost (Rs/group)
<b>Year 1: 1st Crop Season (all activities are conducted)</b>		
1. Farmers understand the goal	- CAP Approach Workshop	6,000
2. Farmers' awareness is raised	- Market Survey by Farmers	20,850
3. Farmers make decision	- Action Plan Making (Crop Selection) - Action Plan Making (Calendar Making)	3,650 3,650

	- Action Plan Making (Resource Mobilization)	3,650
4. Farmers acquire skills	- On-site Coaching (Nursery Making and Transplanting)	9,500
	- On-site Coaching (Plant Protection)	9,500
	- On-site Coaching (Post-Harvest Handling and Marketing)	9,500
<b>Year 1: 2nd Crop Season</b>		
4. Farmers acquire skills	- On-site Coaching (Nursery Making and Transplanting)	9,500
	- On-site Coaching (Plant Protection)	9,500
Follow-up and monitoring (including Participatory Endline Survey)		2,950
Financial support for 1 <sup>st</sup> year	50% of Action Plan	200,000
<b>Year2: 3rd Crop Season</b>		
3. Farmers make decision	- Action Plan Making (Crop Selection)	3,650
	- Action Plan Making (Calendar Making)	3,650
	- Action Plan Making (Resource Mobilisation)	3,650
4. Farmers acquire skills	- On-site Coaching (Plant Protection)	9,500
<b>Year2: 4th Crop Season</b>		
4. Farmers acquire skills	- On-site Coaching (Plant Protection)	9,500
Follow-up and monitoring		2,950
Total		321,150

### Box 7 Melung CAP: Downsized CAP Approach

The Local Government of Melung, Dolakha District, has been implementing its own agriculture development project by applying the CAP Approach. The project is called Melung CAP.

Melung CAP has adapted the CAP Approach packages in accordance with the availability of their human and financial resources. The following methods were taken by Melung CAP, among others, to downsize the CAP Approach.

- ◆ Baseline and Endline surveys as well as Study tours have not been implemented.
- ◆ The importance of record keeping was explained only once. It was explained in the orientation of the CAP Approach, with the distribution of the Farm Management Notebooks of SRC-CAP. As a result, a half of the beneficiary FG members has kept recording with the notebooks.
- ◆ Matching Forum has not been implemented, while farmers have been given enough time to interact with traders in the practice of market survey.
- ◆ In the second year of the CAP Approach application, only technical support to the target farmer groups has been provided. Financial support was given only in the first year.

### 1.3 Estimated cost for each activity

Estimated costs for all activities are calculated in this chapter. The estimations are made only for the purpose of comparing activities so that implementers can decide which activities to select in their extension programmes. Each activity is conducted for a farmer group of 30 members by a JT/JTA with a help of a Field Facilitator (FF). The calculation of these costs is based on the real situations of SRC-CAP Project and mostly on the “Norm (National Norm: 2070 to 2072)”. Allowances for extension staff (JT/JTAs) are included in the cost calculation when applicable, but salary for JT/JTAs and FFs is not.

#### CAP Approach Workshop (Activity 1.1)

- Duration: 1 day
- Organization level: Village level
- Number of Participants: Total (32) – 30 Farmers (30), JT/JTA (1), Resource person (1)
- Items

S.N.	Items	Details	No	Unite Cost (Rs)	Amount (Rs)	Remarks
1	Coordination fee for JT/JTA	▸ Coordination fee ▸ Class 1.5 hours	1	1,000 (300+700) per person	1,000	Necessary arrangement should be made by this amount
2	Resource person fee	▸ Daily allowance ▸ Class / Handouts ▸ Transportation	1	1,900 (400+1,400+100) per person	1,900	May not be necessary
3	Education materials	▸ Documents ▸ Stationery	30	50 per farmer	1,500	Pencil, notebook, photocopy etc.
4	<i>Khaja</i>	▸ Tea and snacks	32	50 per participants	1,600	
Total						<b>Rs. 6,000 / group</b>

Reference: According to Ministry of Finance Letter, No.391 on 2066/11/03 and Revenue Administrative Training Center letter out no.342 on 2066/12/)

#### Matching forum (Activity 2.1)

- Duration: 1.5 days
- Organization level: Municipality or province level for 3 farmer groups
- Number of Participants: Total (21) – Selected farmers (12), JT/JTAs (3), FFs (3), Market related person (2 retailers & 1 buyer) (3)
- Items

S.N.	Items	Details	No.	Unit Cost (Rs)	Amount (Rs)	Remarks
1	Management and stationery	▸Coordination and arrangement by JT/JTA	3	1,000 per person	3,000	Necessary arrangement should be made by this amount
2	Resource person fee for Market related person	▸Class 1.5 hour	3	1,400 per class (1.5hour)	4,200	-
3	Allowances for JT/JTA	▸Accommodation (including DA) ▸Daily allowance	3	1,500 (1,200+300) per person	4,500	-
4	Allowances for FF / farmers	▸Accommodation (including DA) ▸Daily allowance	15	1,250 (1,000+250) per person	18,750	-
5	Market related persons	▸Daily allowance ▸Transportation	3	350 (250+100) per person	1,050	-
6	Transportation	Public bus/ hired car	3	2,000 per group	6,000	Transport cost from FG's site to venue
7	<i>Khaja</i>	▸Tea and snack	24	50 per person	1,200	-
Total for 3 groups					Rs. 38,700 / 3 groups	
Total for 1 group					<b>Rs. 12,900 / group</b>	

Reference: According to letter of finance Ministry Letter out no.391 on 2066/11/03 and Revenue Administrative Training Center letter out no.342 on 2066/12

### Market Survey by Farmers (Activity 2.2)

- Duration: 2.5 days
- Organization level: Municipality or province level
- Number of Participants: Total (6) – Selected Farmers (4), JT/JTA (1), FF (1)
- Items

S.N.	Items	Details	No.	Unit Cost (Rs)	Amount (Rs)	Remarks
1	Management and stationery	▸Coordination and arrangement by JT/JTA	1	1,000 per person	1,000	Necessary arrangement should be made by this amount
2	Allowances for JT/JTA	▸Accommodation (including DA) ▸Daily allowance	1	2,700 (1,200x2 days+300) per person	2,700	Including meal cost
3	Allowances for FF / farmers	▸Accommodation (including DA) ▸Daily allowance	5	2,250 (1,000x2days+250) per person	11,250	Including meal cost
4	Transportation	▸Public bus/ hired car	1	5,000 per day	5,000	-
5	<i>Khaja</i>	▸Tea and snack	18	50 per person	900	6 persons x 3 days-
Total					<b>Rs. 20,850 / group</b>	

Reference: Norm 1.4.2 District level farmer exposure visit/ farmer group exposure visit (Decision date: 2061/8/25)

### Farmer-Supplier Interaction Workshop (Activity 2.3)

- Duration: 1.5 days
- Organization level: Municipality or province level for 3 Farmer Groups
- Number of Participants: Total (24) – Selected Farmers (12), JT/JTA (3), FFs (3), Market related person (6)
- Items

S.N.	Items	Details	No.	Unit Cost (Rs)	Amount (Rs)	Remarks
1	Management and stationery	▸ Coordination and arrangement by JT/JTA	3	1,000 per person	3,000	Necessary arrangement should be made by this amount
2	Allowances for JT/JTA	▸ Accommodation (including DA) ▸ Daily allowance	3	1,500 (1,200+300) per person	4,500	-
3	Allowances for FF / farmers	▸ Accommodation (including DA) ▸ Daily allowance	15	1,250 (1,000+250) per person	18,750	-
4	Market related person	▸ Daily allowance ▸ Transportation (input suppliers, machinery suppliers, banks/micro finance institutions, agricultural insurance companies)	6	350 (250+100) per person	2,100	May not be necessary to pay
5	Hall rental fee	▸ Hall rental fee	1	3,000 per time	3,000	-
6	Transportation	Public bus/ Hired car / Taxi	3	2,000 per group	6,000	Return transport cost to the city center
7	<i>Khaja</i>	▸ Tea and Snacks	24	50 per person	1,200	-
Total					Rs. 38,550 / 3 groups	
Total for 1 group					<b>Rs. 12,850 / group</b>	

Reference: According to letter of finance Ministry Letter out no.391 on 2066/11/03 and Revenue Administrative Training Center letter out no.342 on 2066/12

#### Participatory Baseline Survey (Activity 2.4)

- Duration: 1 day
- Organization level: Village level
- Number of Participants: Total (32) – Farmers (30), JT/JTA (1), FF (1)
- Items

S.N.	Items	Details	No.	Unit Cost (Rs)	Amount (Rs)	Remarks
1	Management and stationery	▸ Coordination and arrangement by JT/JTA	1	1,000 per person	1,000	Necessary arrangement should be made by this amount
2	Data sheet	▸ Photocopy	35	10 per person	350	Baseline Survey sheet
3	<i>Khaja</i>	▸ Tea and snack	32	50 per person	1,600	-
Total					<b>Rs. 2,950 / group</b>	

Reference: 1.2.1 District level farmer training (Decision date: 2061/8/25, revised date: 2065/9/1)

#### Study Tour (Activity 2.5)

- Duration: 3.5 days
- Organization level: Municipality or province level
- Number of Participants: Total (6) – Selected Farmers (4), JT/JTA (1), FF (1)
- Items

S.N.	Items	Details	No.	Unit Cost (Rs)	Amount (Rs)	Remarks
1	Management and stationery	▸Coordination and arrangement by JT/JTA	1	1,000 per person	1,000	Necessary arrangement should be made by this amount
2	Allowances for JT/JTA	▸Accommodation (including DA) ▸Daily allowance	1	3,900 (1,200x3 days + 300) per person	3,900	-
3	Allowances for FF / farmers	▸Accommodation (including DA) ▸Daily allowance	5	3,250 (1,000x3 days +250) per person	16,250	-
4	Transportation	▸Public bus/ hired car	3	5,000 per day	15,000	-
5	Khaja	▸Tea and snack	24	50 per person	1,200	6 persons x 4 days -
Total					<b>Rs. 37,350 / group</b>	

Reference: Norm 1.4.1 District level farmer exposure visit (Decision date: 2061/8/25)

### Action Plan Making (Crop Selection, Calendar Making and Resource Mobilisation) (Activity 3.1)

- Duration: 1 day each for sub-activity (Crop Selection, Calendar Making and Resource Mobilisation)
- Organization level: Village level
- Number of Participants: Total (32) – Farmers (30), JT/JTA (1), FF (1)
- Items

S.N.	Items	Details	No.	Unit Cost (Rs)	Amount (Rs)	Remarks
1	Management and stationery	▸Coordination and arrangement by JT/JTA	1	1,000 per person	1,000	Brown paper, Marker etc.
2	Training fee for JT/JTA	▸Training (2class) ▸Handouts	1	1,050 (350x2 +350) per person	1,050	-
3	Khaja	▸Tea and snack	32	50 per person	1,600	-
Total					<b>Rs. 3,650 / group / sub-activity</b>	

Reference: 1.2.1 District level farmer training (Decision date: 2061/8/25, revised date: 2065/9/1)

### On site coaching (Activity 4.1)

- Duration: 1 day
- Organization level: Village (Training Farm:1/4 ropani)
- Number of Participants: Total (33) – Farmers (30), Resource person (1), JT/JTA (1), FF (1)
- Items

S.N.	Items	Details	No.	Unit Cost (Rs)	Amount (Rs)	Remarks
1	Management and stationery	▸Coordination and arrangement by JT/JTA	1	1,000 per person	1,000	Brown paper, Marker etc.
2	Training fee for JT/JTA	▸Training (2class) ▸Handouts	1	1,050 (350x2 +350) per person	1,050	-
3	Resource person fee	▸Training with handouts (2 Class)	1	2,800 (1,400x2) per person	2,800	-
4	Training Material	▸Seeds ▸Fertilizers ▸Pesticides ▸Materials	-	Training Materials Up to Rs. 3,000 for each Sub-activity	3,000	According to the previous experience.
5	Khaja	▸Tea and snack	33	50 per person	1,650	
Total					<b>Rs. 9,500 / group / Sub-activity</b>	

Reference: 1.2.1 District level farmer training (Decision date: 2061/8/25, revised date: 2065/9/1)



## Follow-up and monitoring

- Duration: 1 day
- Organization level: Village level
- Number of Participants: Total (32) – Farmers (30), JT/JTA (1), FF (1)
- Items

S.N.	Items	Details	No.	Unit Cost (Rs)	Amount (Rs)	Remarks
1	Management and stationery	▸Coordination and arrangement by JT/JTA	1	1,000 per person	1,000	Necessary arrangement should be made by this amount
2	Data sheet	▸Photocopy	35	10 per person	350	Endline Survey sheet
3	<i>Khaja</i>	▸Tea and snack	32	50 per person	1,600	-
Total					<b>Rs. 2,950 / group</b>	

Reference: 1.2.1 District level farmer training (Decision date: 2061/8/25, revised date: 2065/9/1)

### 1.4 Financial Support with 50%-50% cost sharing rules

For the smooth implementation of the CAP Approach, SRC-CAP also provided financial support amounting to NRS 200,000 to each of the beneficiary FGs every year, in order that FGs could prepare the base for market-oriented agriculture with vegetables by purchasing those essential inputs and equipment.

At the Action Plan making, the beneficiary FG members were facilitated by Extension Staff to identify necessary inputs and equipment to carry out their own annual Action Plan. After the identification of necessary inputs and equipment, Extension Staff facilitated the FG members to mobilize resources to obtain the identified necessary inputs and equipment. At this timing, as one of the possible external sources, the financial support from SRC-CAP was presented.

The financial support was provided on a request basis to FGs. Up to 50% of the total costs of inputs or equipment required to implement their own Action Plan was paid by SRC-CAP, while the remaining 50% was paid by the FG in cash or in kinds, including the provision of labor. All the beneficiary FGs made a request to SRC-CAP for financial support observing the 50%-50% rules. Detailed procedure for the provision of the financial support from SRC-CAP is illustrated in Annex1.

The implementers may also consider a financial support to those beneficiary FGs that are in need for support to prepare the base for market-oriented agriculture. However, when it is the case, the implementers are suggested put clear conditions and rules for financial support, as SRC-CAP did. For instance, the provision on a request basis, based on the applicant FG's own action plan, and only when the cost-sharing rules are observed could form part of such conditions.

Based on the experience of SRC-CAP, possible inputs and equipment that FGs could obtain with a 50%-50% cost sharing support can be summarized as follows.

**Possible Inputs and equipment to be obtained by FGs with 50%-50% cost sharing**

Average No. of farmer group members: 25

Base rate: Fy 2019/2020

Ceiling of external financial support (50% of the total cost)	Possible Options of Support		
	In case of cash contribution by farmer group to meet the 50-50 cost sharing rule	In case of In-kind contribution by farmer group to meet the 50-50 cost sharing rule	
NPR 25,000	1	Seeds	1 Small scale pipe irrigation (up to 300m length with 20 and 25 mm dia 10 kg/cm <sup>2</sup> HDPE pipe or 32 mm dia 6 kg/cm <sup>2</sup> HDPE pipe)
		Insecticides and Pesticides	
		Micronutrients	
	2	Cell tray	
		Coco pit	
		Poly bag	
		Nursery plastic bag	
	3	Yellow sticky trap not lesser than 100 pcs.	
		Pheromone trap set	
	4	Plastic crate	
		Watering can of 5-10 ltr. capacity	
	5	Pruning/ Weeding/ Digging Tools	
	NPR 50,000	1	
Garden/Nursery Pipe with sprinkler irrigation set			
2		Drip irrigation set	
3		Spring Balance	
		Digital weighing machine among 4-5 members	
4		Mulching plastic of 400 m roll	2 Small scale pipe irrigation (350-400 m length with 40 mm or 50 mm dia 6 kg/cm <sup>2</sup> HDPE pipe)
5		Organic Fertilizer	
		Chemical Fertilizer (DAP, UREA & Potash)	
6	Water lifting pump of 1-2 HP capacity among 3-4 members.		

NPR 100,000	1	Electric sprayer 16 ltr. capacity	1	Sipaulin Plastic of 5m x 12 m, 70 GSM for tunnel
	2	2-3 no. of mini tiller of minimum 7.5 HP capacity	2	Sipaulin Plastic of 4m x 5m, 200 GSM for plastic pond with 3m length overflow pipe
		Power Tiller of 18 HP capacity	3	Small lift irrigation or pipe irrigation (250-300 m length with 63 mm or 75 mm dia 6 kg/cm <sup>2</sup> HDPE pipe)
3	Water storage tank of 500 ltr. capacity with fitted tap and garden/nursery pipe			
NPR 150,000	1	Water storage tank of 1000 ltr. capacity with fitted tap and garden/nursery pipe	1	Sipaulin plastic of 6m x 12 m, 90 GSM for tunnel
	2	Green net/Insect net/ UV plastic for tunnel	2	Sipaulin plastic of 6m x 10 m, 200 GSM for plastic pond with 3 m length overflow pipe
	3	Water lifting pump of 7.5 HP capacity 90 mm diameter outlet.	3	Small scale pipe irrigation (275-300m length with 90 mm dia 6 kg/cm <sup>2</sup> HDPE pipe)
NPR 200,000	1	Construction of Permanent structure for tunnel (Combination of 1.5 inches and 2 inches diameter circular pipe)	1	Small Collection center/ sales output
			2	Small scale pipe irrigation (250-275 m length with 110 mm dia 6 kg/cm <sup>2</sup> HDPE pipe)

PART 2: Source: SRC-CAP

### 3. Field Facilitators

SRC-CAP employed a Field Facilitator (FF) for each of the target FG with the following functions. FFs were paid monthly for their support to the Project, the Extension Staff and the concerned FG, in addition to the communication and transportation allowances. FFs were also invited to all the training opportunities together with the Extension Staff, and they also became knowledgeable and skillful in the market-oriented vegetable farming and marketing. While the Extension Workers were able to visit FGs only when any activity was organized, FFs were positioned to give hands-on support to the FG members on a daily basis. Thus, the contribution of FFs for the implementation of the Project was significant.

It is recommendable for a Local Government to explore the possibility to hire field facilitators from the target FG members, as assistants to the Extension Staff, for the smooth application of the CAP Approach. However, when a Local Government cannot afford to hire FFs, the Local Government may select those FGs whose leaders or other members could play the roles of FF at the selection of beneficiary FGs. Alternatively, the Local Government, through Extension Staff, may discuss with the beneficiary FGs to have one of the FG members play the roles of FF, after the selection of beneficiary FGs.

The following is the roles played by FFs in SRC-CAP.

#### Operation:

- ◆ To support the preparation and implementation of the project activities:
- ◆ To assist the SMS/JT/JTA in charge of the FG in the preparation and implementation of the CAP activities with the FG members by attending all such activities.
- ◆ To support FG in the farming and marketing:
- ◆ To facilitate the establishment of a Training Farm within the community where the majority of FG members live.
- ◆ To attend the training and learning opportunities and to disseminate the knowledge and skills obtained through such opportunities to the FG members.
- ◆ To assist the FG members in record keeping of farming and marketing activities and information as well as in filling any questionnaires and forms
- ◆ To contribute to awareness-raising among the FG members on commercial agriculture with the perspectives of gender equality and social inclusion.
- ◆ To support FG in communication and coordination with other stakeholders:
- ◆ To convey relevant information and feedback of the FG to the Ward Committee, the Local Government Office, the SMS/JT/JTA in charge of the FG, and vice-versa.
- ◆ To submit a report relevant to the FG:

- ◆ To conduct/ facilitate the data collection from the FG members, accessible markets and suppliers, etc.
- ◆ To prepare and submit monthly technical/administrative reports to the Ward Committee as well as the Local Government Office through the SMS/JT/JTA in charge.
- ◆ To post relevant reports with pictures on the Facebook page of CAP, if any.

Administration:

- ◆ To support FG in the purchase of necessary inputs for the Training Farm and other CAP activities with the budget provided by the Local Government Office
- ◆ To facilitate FG to obtain quotations and bills for necessary inputs for the Training Farm and other CAP activities, including financial support from the same project.

Others:

To provide any other services for the CAP activities, upon requests made by the FG, the SMS/JT/JTA in charge of the FG, and the Local Government Office.

# PART 4. EXTENSION MATERIALS

“PART 4 EXTENSION MATERIALS” provides extension materials useful for the implementation of the CAP Approach

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## List of Extension Materials

Categories	No.	Title
Format	1.1	Format for the Producer Group Profile
	1.2	Market Survey Format
	1.3	Baseline and Endline Survey Format
	1.4	Format of Crop Nomination (Action Plan Making)
	1.5	Format of Voting in Crop Selection (Action Plan Making)
	1.6	Format of Crop Calendar
Training Materials	1.7	Picture Story (Kami-shibai) of Rajan
	1.8	Picture story (Kami-shibai) of Rupa
	1.9	Compost Making
	1.10	Nursery Making and Transplanting
	1.11	Plant Protection
	1.12	Post-Harvest Handling and Marketing

## कृषक समुहको उत्पादन जानकारी

जिल्ला:  
गाउँपालिका/नगरपालिका:  
सम्पर्क ब्यक्तिको नाम र फोन नं. :

क्र.सं.	तरकारीको नाम	तरकारी टिप्ने महिना	समुहको बार्षिक उत्पादन (कि.लो)	संभाव्य उत्पादन (छिमेकीबाट)
जम्मा				

1.2 Market Survey Format

बजार सर्वेक्षण फाराम

बजारको नाम:

भिति:

सलान सदस्यहरु:

ब्यापारीको नाम र सम्पर्क नं.	लक्षित तरकारी र जात	अत्याधिक माग हुने समय (महिनाको नाम)	मुल्य (रु./केजी)	परिमाणरमात्रा र आपूर्तिको पटक	भुक्तानी अवधि	थोक तथा खुद्रा ब्यापारीको अपेक्षा
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	

### 1.3 Baseline and Endline Survey Format

उत्पादन र आम्दानी विश्लेषण तथ्याडक फारम  
 मिति: \_\_\_\_\_ नगरपालिका/गाउँपालिका: \_\_\_\_\_ समुहको नाम: \_\_\_\_\_ सदस्यको नाम: \_\_\_\_\_  
 लिंग: महिला/पुरुष जाती: (ब्रान्च/क्षेत्री / जनजाति / वंश/ जात्य) सोवाइल नं: \_\_\_\_\_ बाफु सँगै बस्ने परिवारको सदस्यको सख्या: \_\_\_\_\_  
 बाफु सँगै बस्ने परिवारको सदस्यको सख्या: \_\_\_\_\_

#### १. कृषि आम्दानी

१.१ तपाईंको परिवारले गरेको बर्ष (२०७३ माघ देखि २०७४ पुस) मा कुन कुन बाली खेती गर्नु भयो?  
 क. ताजा तरकारीहरू (खालु/ताजा मसला बालीहरू समेटेने, तर बहुवर्षी बाली जस्तै जुनाइ, बलैचि नसमेटने)

क्र.सं.	२. बालीको नाम र जातहरू	३. रोप्ने देखि टिप्ने समय	४. बाली लगाएको क्षेत्रफल		५. जम्मा उत्पादन (किलो)	६. जम्मा बिक्रेको उत्पादन	७. बिक्री रकम (रु)	८. उत्पादन लागत			९. जम्मा लागत खर्च (क+ख+ग)	१०. सुद आम्दानी
			संख्या	एकई (रोपनी/आना/बर्ग मिटर)				क. कृषि सामग्री (बिउ, रसायनिक मल, बिषादी)	ख. ज्यालादारी ज्यामी खर्च	ग. अन्य (ढुवानी, जम्मा भाडा)		
१	गोलमेडा(बुला) जात:	देखि _____ सम्म _____										
२	गोलमेडा (टनेल) जात:	देखि _____ सम्म _____										
३		देखि _____ सम्म _____										
४		देखि _____ सम्म _____										
५		देखि _____ सम्म _____										
६		देखि _____ सम्म _____										
७		देखि _____ सम्म _____										
८		देखि _____ सम्म _____										
९		देखि _____ सम्म _____										
१०		देखि _____ सम्म _____										
			<b>जम्मा</b>									

१.२ के तपाईले आफ्नो बालीको आमदानी/खर्चको विवरण राख्ने गर्नु भएको छ ?

छ /  छैन

१.३ के तपाईले खेती गर्नु भन्दा अगाडि खेती योजना बनाई उत्पादन, खर्च, बिक्रि र आमदानीको बाली अनुशार अनुमान गर्नु हुन्छ ?

छ /  छैन

१.३ के तपाईले बाली बेचिसके पछि लागत खर्च र आमदानी हिसाब गर्नु हुन्छ ?

छ /  छैन

## २. खेती प्रविधि

२.१ के तपाईले गएका वर्षमा तरकारी उत्पादन गर्दा निम्न किसिमका प्रविधिहरु अपनाउनु भएको छ ?

### क. जग्गाको तयारी र नर्सरी बनाउनु

- तपाईले नर्सरीमा बिउ कसरी रोप्नु हुन्छ ?

छर्ने /  रेखा/धर्सा बनाएर रोप्ने /  प्लास्टिकको थैलामा(polybag) रोप्ने

- के तपाइले नर्सरी बनाउनु हुन्छ ?

छ /  छैन

- तल विएको चित्र मध्य तपाईलाई कुन बेर्ना राम्रो हो जस्तो लाग्छ (क अथवा ख) ?

क

ख



दुई आख्ला बिचको छोटो दुरी

मोटो डाँठ



दुई आख्ला बिचको लामो दुरी

मसिनो डाँठ

- के तपाईले बेर्ना सार्नु भन्दा पहिले रोप्ने दुरी नाप्नु हुन्छ ?

छ /  छैन

### ख. मल बनाउने

- के तपाईले मल तयार गर्दा पराल अथवा सुख्खा घास मिसाउने गर्नु हुन्छ ?

छ /  छैन

- के तपाईले मललाई घास अथवा प्लास्टिकले छोप्ने गर्नु हुन्छ ?

छ /  छैन

- के तपाईले मललाई पल्टाउने गर्नु हुन्छ ?

छ /  छैन

- तपाईको बिचारमा मल तयार हुन कति महिना लाग्छ ? (सालाखाला)

१  २  ३  ४  ५  ६  
अन्य ( )

### ग. रोगकिरा नियन्त्रण

- तपाईले रोगकिरा कसरी नियन्त्रण नियन्त्रण गर्नु हुन्छ ?(धेरै कोठामा चिन्ह लगाउन सक्नु हुन्छ)

किटनाशक/ हुसीनाशक /  भारपातनाशक/  
 मोहनी पासो /  स्थानिय सामाग्री /

अन्य( )

- तपाईले एउटा बालीमा कति पटक बिषादी छर्नु हुन्छ ?

( ) पटक / (हप्ता / महिना / मौसमी)

- के तपाईले बिषादी छर्नु भन्दा अघि सुभाब अनुशार बिषादीको मात्रा नाप्नु हुन्छ ?

छ /  छैन

- के तपाइले आफ्नो खेतीमा बाली चक्र अपनाउनु भएको छ ?

छ /  छैन

### घ. पोस्टहार्भेष्ट व्यवस्थापन

- तपाईले बाली टिपिसके पछि के गर्नु हुन्छ ?(धेरै कोठामा चिन्ह लगाउन सक्नु हुन्छ)

धुने/ छान्ने /  ग्रीडिड गर्ने /  मुठा पाने /  
 प्याक गर्ने/  अन्य( )

- बजारमा तरकारी पठाउदा कसरी पठाउनु हुन्छ ?

सबै मिसाएर /  आकार अनुसार /  गुणस्तर अनुशार/  
 बजारको माग अनुशार

## ३. बजारीकरण

३.१ तपाईले तरकारी बेच्दा, नियमित कति जना ब्यापारीसग सम्पर्क गर्नु हुन्छ ?

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५ भन्दा बढि

हामीले परिवारको सदस्यहरु बिच छलफल गरेर यो फारम भरेका छौ ।

समुहको सदस्यको नाम: \_\_\_\_\_

परिवारको सदस्यको नाम: \_\_\_\_\_

मिति: \_\_\_\_\_

समुह सदस्यको सम्बन्ध भएको व्यक्तिको हस्ताक्षर: \_\_\_\_\_

# लक्षित मुख्य र बाली छनौट (हरेक सिजन)

## बजार सर्वेक्षणको फारम

ब्यापारीको नाम र सम्पर्क नं.	लक्षित तरकारी र जात	अत्याधिक माग हुने समय (महिना)	मुख्य (रु./केजी)	परिमाण (केजी) र आपूर्ति (दैनिक/साप्ताहिक इत्यादी)	भुक्तानी अवधि ब्यापारीबाट अपेक्षा	समुहबाट तरकारी लिन डिलरको इच्छा
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	छ/छैन
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	छ/छैन
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	छ/छैन
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	छ/छैन
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	छ/छैन
				/दिन /हप्ता /महिना	/दिन /हप्ता /महिना	छ/छैन

### 1.5 Format of Voting in Crop Selection (Action Plan Making)

उदाहरण:

छनौट				
जम्मा				
सम्भावना				
अनुभव				
बाली				



# टिपोट लक्षित बालीहरुको खेति पात्रोको बिकास

## खेती पात्रोको फारम

### उदाहरणः

बस्ति				
उचाईः	मी.			
साईटको कृषि पर्यावरणिय क्षेत्रः	उच्च पहाड	मध्य पहाड	बेसी	

बाली	जग्गाको किसिम	Mid Jan.- Mid Feb.		Mid Feb.- Mid Mar.		Mid Mar.- Mid Apr.		Mid Apr.- Mid May		Mid May- Mid Jun.		Mid Jun.- Mid Jul.		Mid Jul.- Mid Aug.	
		माघ	फागुन	चैत्र	बैशाख	जेठ	असार	श्रावण							
गोलभेडा	खुल्ला	१	२	३	४	१	२	३	४	१	२	३	४		
करेला	खेत														

(नोट) नर्सरी/ रोप्ने: NS, सार्ने: TP, टिप्ने: H



- राजनको बजारसँगको २० बर्षको सम्बन्ध बारे यो एउटा कथा हो ।
- यो कथामा मुनाफा बढाउन किसान र ब्यापारी बिच कसरी आपसी बिश्वास कायम गर्ने भन्ने बारे धेरै सिकाईहरु छन् ।
- राजन काभ्रे धुलिखेलका एउटा सफल तरकारी उत्पादन गर्ने कृषक हुन् ।
- उनले १८ रोपनी जग्गामा पारिवारिक श्रमबाट मात्र काको, काउली, गोलभेडा र आलु उत्पादन गरी रहेका छन् ।
- उनले बार्षिक करिब रु ३० लाखको तरकारी बेच्छन् ।

१



### अनुभव- १ ठगीनु बाट कसरी जोगिने ?

राजनले बिचौलियालाई काको बेचदै गर्दा,

श्याम भन्ने बिचौलियाले भन्छन्,

“काकोको खेतबारीको मुल्य २५ रुपैया छ ।”

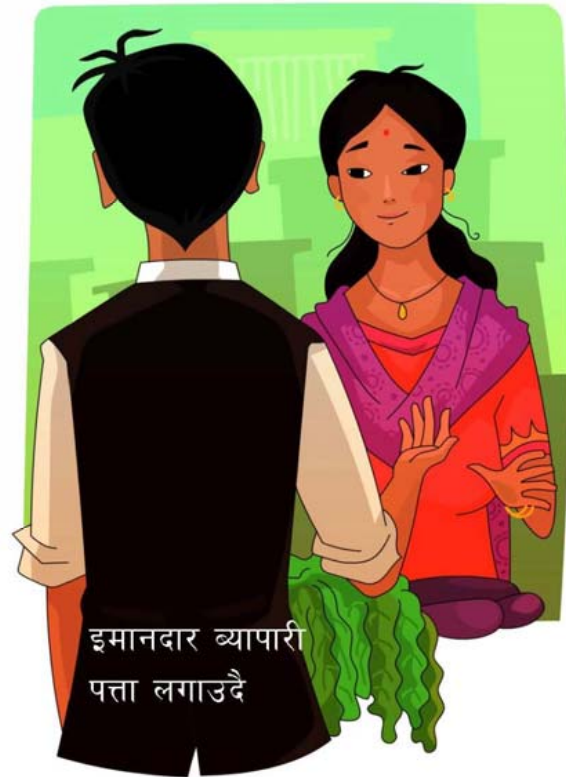
राजनलाई थाहा छ कि उक्त काकोको मुल्य बनेपा तरकारी बजारमा ४० रुपैया छ तर श्यामले बताउछन्,

“यो मुल्यमा फरक भएको ढुवानी खर्चले गर्दा हो ।”

५! ? ! ?



ठगीएको महशुस गर्दै



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- जब कुनै बिचौलियाले ठगी गर्छ, कृषकहरु चलाख भएमा उसको ठगी छिटै पत्ता लगाउछन् र अन्य इमानदार व्यापारीहरुको खोजी गर्छन् ।
- त्यसैले, यदि बिचौलियाले लगातार ठगी गरिरहेमा, इमानदार बिचौलियालाई बढि फाईदा हुन्छ । र ठगी गर्ने बिचौलियाले आफ्नो व्यापार गुमाउछ ।
- यो प्रतीस्पर्धात्मक बजारको आधारभुत प्रक्रिया हो ।

३





**प्रश्न:** के कुनै बिचौलियाले ठगी गर्ने गर्छन् ?

**उत्तर:** गर्छन्, काठमाडौंमा प्रतिस्पर्धा धेरै छ, धेरै जसो ब्यापारीलाई थाहा छ कि ठगी गर्न गाह्रो छ र उनीहरुको ब्यावसायका लागि बेफाइदाजनक छ । तर जहा प्रतिस्पर्धा कम हुन्छ त्यहाका बिचौलियाले यो प्रक्रिया बुझेका हुदैनन् त्यसैले ती मध्ये कुनैले ठगी गर्न सक्छन् ।

त्यसैले अन्य बजारको सूचनासँग मुख्यतया काठमाडौंका बजारहरु सँग दोहोरो जाच गरि बिचौलियासँग कुराकानी गर्न जरुरी छ ।

तपाईंको लागि यो प्रतिस्पर्धालाई बुझेर भरपर्दो ब्यापारी पत्ता लगाई उनीहरुसँग आपसी विश्वास कायम गर्नु एकदमै महत्वपूर्ण छ ।



अनुभव-२ कसरी राजनले सजिलै आफ्नो उत्पादनलाई अरु भन्दा बढि मुल्यमा बेच्ने गर्छन् ?

उनले काको ढुवानी गर्दा क्षतिबाट जोगाउन बोराको मुनीतिर कागजहरु दोबारेर राख्ने गर्छन् ।

यो कुराको प्रशंसा गर्दै बिरमानले बजारको मुल्य भन्दा थोरै बढाएर दिए किनभने बिरमानलाई थाहा छ कि राजनको काको राम्रो गुणस्तरको छ ।



किन व्यापारीले ठगी गर्न सक्दैनन्?  
किन व्यापारीले कम मुल्यमा गरिद गर्न सक्दैनन् ?

सक्दैनन्! किनभने यदि कुनै व्यापारीले राम्रो गुणस्तर हुदा हुदै कम मुल्य दियो भने राजनले अरु व्यापारीलाई आफ्नो वेच्छन्।



उच्च गुणस्तरको काकोको माग

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**प्रश्न:** किन बिरमानले ठगी गर्दैनन् ?

**उत्तर:** किनभने बिरमानले आफ्नो ग्राहकको माग पुरा गर्न लगातार रुपमा राजनको उच्च गुणस्तरको काको चाहान्छन् । यसले बिरमानलाई पनि मुनाफा छ ।

यदि बिरमानले राम्रो गुणस्तर हुदा हुदै कम मुल्य दिए भने राजनले अरु व्यापारी खोज्छन् जसले राजनको काकोको गुणस्तरलाई बुभन्छ ।

यो प्रतिस्पर्धा बिरमानलाई राम्रोसँग थाहा छ । त्यसैले यो अर्थमा आफ्नो मनसाय नभएता पनि बिरमान एउटा भरपर्दो व्यापारी हुन् ।

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क्षति कम गर्न २५-३० केजीको प्लास्टिकको भोलामा प्याक गर्ने



एकैपटकमा तरकारी पठाएर केहि मात्रामा ढुवानी लागत कम गर्न सकिन्छ ।

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काकोको गुणस्तर अझ बढाउन, राजनले आफ्नो उत्पादनलाई छान्ने गर्दछन् र व्यापारीको अनुरोध अनुसार २५-३० केजीको प्लास्टिकको भोलामा पठाउछन् । यदि काकोलाई ५०-६० केजीको बोरामा राख्यो भने ओसारपसार गर्दा भित्र भएको काकोमा क्षति पुग्न सक्छ ।

उनले लगातार २० वर्ष देखि व्यापारीको अनुरोध अनुसार गुणस्तर सुधारमा प्रयास गरि रहेका छन् ।

सफल बजारीकरणको लागि परिमाण अर्को महत्वपूर्ण कारक हो । काठमाडौंका थोक व्यापारीलाई एउटा निश्चित परिमाणको आवश्यक छ । एकैपटकमा तरकारी पठाएर पनि ढुवानी लागत कम गर्न सकिन्छ ।

यी प्रयासहरुबाट, राजनले व्यापारीबाट धेरै प्रशंसा पाएका छन् र राजनको तरकारीले काठमाडौंका विभिन्न बजारमा आफ्नो पहिचान स्थापना गरेको छ ।

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### राजनको कथाबाट अहिले सम्म सिकेका पाठहरु

- बजारको प्रतिस्पर्धा बुझेका ब्यापारी र बिचौलियाको अनुरोधलाई सके सम्म प्रतिक्रिया दिने कोशिस गर्नु पर्छ ।
- तपाईंको प्रयासहरुले बजारमा पक्कैपनि प्रशंसा पाउने छ । तर ब्यापारीसँग आपसि बिश्वास कायम हुन केही समय लाग्न सक्छ । धैर्य भएर ब्यापारीको अनुरोध अनुसार प्रयासहरु गर्दै जानुपर्छ ।
- जब सम्म तपाईं ब्यापारीहरुलाई नछलि उनीहरुसगँ राम्रो सम्बन्ध कायम गर्नु हुन्न, तपाईंको ब्यावसाय कहिल्यै माथि उठ्न सक्दैन । राजनले १८ बर्ष अगाडि जसरी यी खुड्किला पार गर्न सुरु गरे, तपाईंहरु पनि आजैबाट यी प्रयास सुरु गर्नुपर्छ ।

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आफ्नो तरकारी बजारमा बढि माग हुदा उत्पादन हुने गरि रोप्ने समय मिलाउने

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### राजनले मुनाफा बढाउन अपनाएका ४ रणनीतिहरू

पहिलो, राजनले बजारमा अभाव हुदा आफ्नो तरकारी उत्पादन हुने गरि रोप्ने समय मिलाउछन् । उनले बजारमा माग धेरै भएको बेला आफ्नो उत्पादन बेच्ने गर्दछन् । यो माग बढि हुदा बेच्ने एउटा रणनीति हो ।

यो ब्यापारीको अनुरोधलाई प्रतिक्रिया दिने एक प्रयास हो । ब्यापारीहरूले आफ्नो ग्राहकको माग पूरा गर्न बजारमा अभाव भएका तरकारी खोज्ने गर्दछन् । बजारमा कुनै तरकारीको अभाव हुदा, उक्त तरकारीको मुल्य बढि भएपनि ब्यापारीले अभाव भएको तरकारी पाउदा प्रशंसा नै गर्दछन् ।

6





मुल्यमा तलमाथि हुने खतरा घटाउन माग धेरै हुने अन्य तरकारी बालीहरु लगाउने (बिबिधता ल्याउने)

१०

### राजनको दोस्रो रणनीति बिबिधता

- राजनले बजारमा अभाव भएको बेला आफ्नो तरकारी बेचेता पनि दिन दिनैको आपूर्ति र माग तलमाथि हुदा कुनै दिन उनको तरकारीको मुल्य पनि घट्न सक्छ ।
- यो खतरा घटाउन, राजनले एउटा मात्र बालीमा ध्यान नदिई माग धेरै हुने अन्य तरकारी बालीहरु लगाउने गर्दछन् ।
- उदाहरणको रुपमा यदि उनले गाजरमा सोचेको भन्दा कम मुल्य पाएपनि, काउलीमा धेरै मुल्य पाउन सक्छन् र यसले गाजरमा भएको घाटा कम गर्न मद्दत गर्न सक्छ ।

१०



ताजा सुचनाहरु आफै संकलन गर्ने

११

राजनको तेस्रो रणनीति, विभिन्न सुचनाहरु आफै संकलन गर्नु ।

राजनले नयाँ सामाग्री बारे जान्न काठमाडौँमा आयोजना हुने विभिन्न कृषि सामाग्रीको प्रदर्शनीमा भाग लिने गर्छन् । उदाहरणको लागि यदि राजनले किटनाशकको बारेमा थाहा पाए भने, उनले सबैभन्दा प्रभावकारी किटनाशक छान्न सक्छन्, एगोभेटले आफ्नो फाईदा हेरेर सुझाव दिन सक्छन् ।

बजारको सुचनामा पनि, उनले आफ्नो क्षेत्र वरपर र काठमाडौँमा रहेका धेरै ब्यापारीलाई चिनेका छन् । त्यसैले उनले बजारको अवस्था हेरेर ताजा र सहि सुचनाको आधारमा निर्णय लिन सक्छन् ।

११



“के मेरो ब्यावसायका लागि यी सब जरुरी छन् ?”

१२

राजनको चौथो रणनिति, लागत खर्च कम गर्नु ।

- राजन जहिले पनि नयाँ खेती प्रविधि जस्तै औजार र मेसिनको बारेमा जान्न उत्सुक हुन्छन् । तर उनले जहिले पनि आफुसँग प्रश्न गर्छन् “के यो मेरो ब्यावसायको लागि जरुरी छ ?”
- आम्दानी भनेको बिक्रि रकममा लागत खर्च घटाउनु हो ।
- बिक्रिको मात्रा बढाउनु बाहेक खर्च कम गर्नु पनि मुनाफा बढाउनु हो ।
- यदि उनले धेरै पैसा खर्च गरे भने, उनले बिक्रि बढाए पनि मुनाफा बढाउन सक्दैनन् । उनलाई अत्याधुनिक उपकरणहरूले आकर्षित त गर्छन् तर उनले जहिले पनि उनले आवश्यक छ कि छैन सोचेर किन्ने गर्छन् ।

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राजनका छिमेकी किसानहरुले पनि उनीहरुको उत्पादन सगै बेचन अनुरोध गरे।

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हालै उनका छिमेकी कृषकहरुले पनि उनीहरुको उत्पादन सगै बेचन अनुरोध गरे ।

यो राजनको लागि राम्रो प्रस्ताव हो किनभने धेरै उत्पादन हुदा उनले ब्यापारीसँग अझ मोलतोल गर्न सक्छन् । सामुहिक बजारीकरणको यो एउटा ठूलो फाईदा हो ।

सोहि समयमा यदि गुणस्तर युक्त भएन र तरकारी बजार लाग्ने समय मिलेन भने, सामुहिक बजारीकरण गर्न कठिन हुन सक्छ किनभने राजनले पहिला नै आफ्नो गुणस्तरीय तरकारी र सहि समयमा उपलब्ध गराएर ब्यापारीसँग आपसी सम्बन्ध कायम गरि सकेका छन् ।

त्यसैले राजनले पर्याप्त गुणस्तर र बजार लग्ने समय मिलेको खण्डमा आफ्नो छिमेकी किसानको सामुहिक बजारीकरणको प्रस्तावलाई स्वीकार गरे ।

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राजनले कहिले काहि आफ्ना छिमेकी कृषकहरु सँग कृषि सामाग्रीहरु जस्तै बिउ र मल सामुहिक माग संकलन गर्ने छलफल गर्छन् ।

यो सामुहिक क्रियाकलापको अर्को फाईदा हो किनभने कृषकहरुले निश्चित मात्रामा सामाग्री खरिद गर्दा सस्तो मुल्यमा फाईदा उठाउन सक्छन् ।

तर सहि समयमा सबै सदस्यहरुको नगद जम्मा गर्न समस्या आउन सक्छ । ‘भरपर्दो’ सदस्यहरु मात्र रहदा सहभागिको संख्या कम हुन सक्छ ।

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जब तपाईं बजारको सहि प्रतिस्पर्धा बुझेको ब्यापारीसँग आपसी विश्वास कायम गर्न सफल हुनु हुन्छ, तपाईंहरूले पनि राजनले जसरी बढि मुनाफा कमाउन सफल हुनु हुन्छ। यो कुरालाई महशुस गर्न निम्न कुराहरु बुझ्न जरुरी छ।

१. यस्तो ब्यापारी पत्ता लगाउनु होस् जुन बजारको अधिक प्रतिस्पर्धामा काम गरि रहेको छ, फलस्वरुप ऊ भरपर्दो ब्यापारी बन्न सक्छ।
२. गुणस्तर र परिमाणको लागि ती ब्यापारीले गर्ने आग्रह सके सम्म मानौं।



बजारमा बढि माग हुने समयको जाच गरौं ।

दैनिक मुल्यमा उतार चढावको खतरालाई कम गर्न उत्पादनमा विविधता ल्याउनु पर्छ ।



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३. बजारमा अभाव हुने तरकारी उत्पादन गरौं । ब्यापारीले ईमान्दारीका साथ तपाईंको तरकारीको बढि मुल्य दिएर तपाईंको प्रशंसा गर्ने छन् ।
४. अधिको रणनितिमा जस्तै दैनिक मुल्यमा उतार चढावको खतरालाई कम गर्न उत्पादनमा विविधता ल्याउनु पर्छ ।

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सुचना संकलन गरौं ।

“के यो मेरो व्यवसायको लागि जरुरी छ?”



कुनै सर्तमा सामुहिक  
बजारीकरण फाईदाजनक  
हुन्छ?



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५. खेती प्रविधि र बजारको अवस्था, विशेष गरि काठमाडौंको अबस्था बारे जहिले पनि भरपर्दो स्रोतबाट नयाँ र सहि सुचना लिने गरौं ।
६. कुनै नयाँ कृषि सामाग्री, औजार र मेसिनले तपाईंलाई आकर्षित गर्दा, खर्च कम गर्न “यो मेरो ब्यवसायको लागि जरुरी छ कि छैन ?” भन्ने सोचन जरुरी छ ।
७. अहिलेको कृषक समुह पछिको कृषि सहकारी, कृषकहरुको लागि संक्षम र फाईदाजनक हुन सक्छ तर यसलाई ब्यबस्थापन गर्न सजिलो छैन ।

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## 1.8 Picture story (Kamishibai) of Rupa



**रू**पा ३४ वर्षकी भइन् । उनका चार जना बालबच्चा छन् । उनी श्रीमान्, बालबच्चा र सासूससुरा गरी जम्मा आठ जनाको परिवारमा बस्छिन् । उनको परिवार आर्थिक रूपले विपन्न छ । उनका श्रीमान् कहिलेकाहीं सामान्य ज्यामी काम गर्छन् । परिवार चलाउन सक्ने गरी उनको आमदानी छैन । त्यसैले रूपालाई बच्चाहरूलाई विद्यालय पढाउन तथा घर चलाउन कठिन छ । रूपा आफ्नो घरछेउमा भएको एक टुक्रा सानो जग्गामा सामान्य तरकारी खेती गर्छिन् । तर यसमा उनका श्रीमान्को साथ र सहयोग छैन । करेसाबारीबाट उत्पादन भएको सागसब्जी बेचेर रूपा सामान्य तरिकाले घर व्यवहार चलाउँछिन् ।



Source: SRC-CAP Project





यही क्रममा व्यावसायिक खेती प्रवर्द्धनमा सहयोग गर्ने संस्था उनको गाउँमा आयो र रूपा जुन 'तरकारी उत्पादन समूह' मा आबद्ध थिइन्, सोही समूहलाई संस्थाले छान्यो । जे.टी. बहिनीले रूपालाई 'तपाईं समूहमा निरन्तरता दिनुहुन्छ कि हुँदैन एकपल्ट श्रीमान्लाई सोधेर खबर गर्नुहोस्' भनिन् । रूपालाई तरकारी उत्पादनसँग सम्बन्धित अझ बढी ज्ञान र सीप आर्जन गर्ने औधी इच्छा थियो । अर्कोतिर श्रीमान्ले उनलाई समूहमा बस्ने अनुमति दिँदैनन् भन्ने पनि थाहा थियो । त्यसैले उनले आफ्नो सिकने इच्छालाई स्वीकार गरी श्रीमानसँग सल्लाह नै नगरी समूहलाई निरन्तरता दिन्छु भनिन् । रूपालाई समूहमा एकदमै क्रियाशील भएर समूह गतिविधिमा भाग लिन गाह्रो पर्दथ्यो । किनभने उनी घर व्यवहारदेखि गाईबस्तु, घाँस-दाउरा, तरकारी खेतीजस्ता सबै काम भ्याएर मात्र समूहको बैठक तथा तालिममा पुग्न सकिथन् । घर फर्केपछि घरमा सम्पूर्ण काम पनि उनले नै गर्नुपर्थ्यो ।



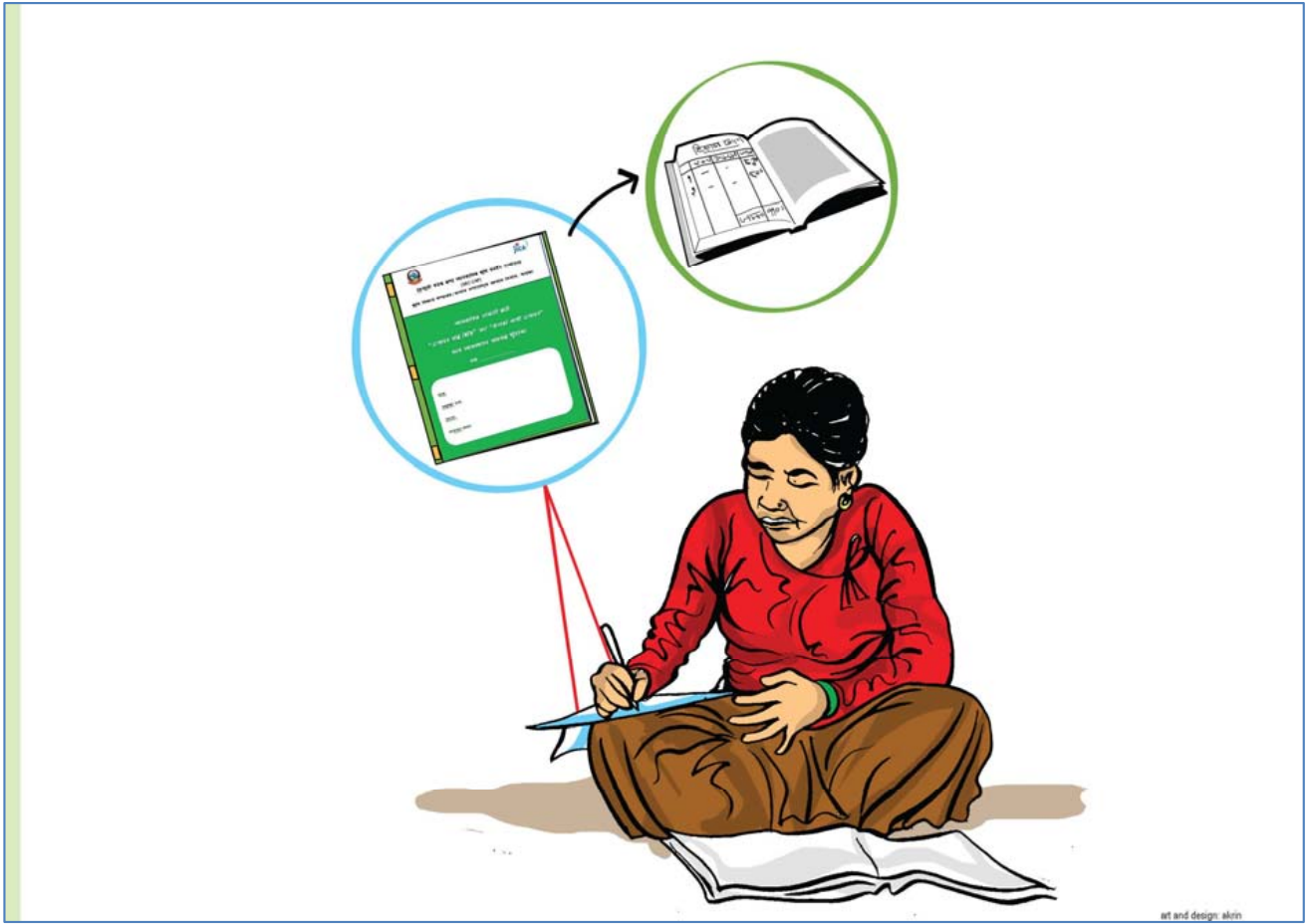




रूपाको समूहमा भएका सदस्यहरूले बजार सर्वेक्षण गरेर गोलभेंडा सबैभन्दा बढी बजार मूल्य भएको खेती हो भन्ने निक्कै गर्री गोलभेंडा खेती गर्ने निर्णय गरे । सोहीअनुसार रूपाले पनि गोलभेंडा खेती गरिन् । उनले यसको ज्ञान र सीप तालिमबाट सिकेकी थिइन् । उनको मिहिनेत, लगनशीलता र प्रतिबद्धताले गोलभेंडा खेती एकदमै फस्टायो । जे.टी.ले उनको खेती सबैभन्दा उत्कृष्ट भएको जानकारी गराएपछि उनी भन् उत्साहित भइन् । तर यो खेतीले उनको कार्यबोझ एकदमै बढ्न गयो । उनले घरबाट कसैको सहयोग र साथ पाएकी थिइन् । घरका कुनै पनि सदस्यले रूपाले गरेको तरकारी खेती सम्पूर्ण परिवारका लागि नै फाइदाजनक छ भन्ने कुरा बुझ्नै खोजेन् । भन् उल्टो रूपालाई नै जथाभावी भन्ने गर्थे । विभिन्न अवरोधका बीच उनले गोलभेंडा खेती गरिरहिन् ।







**जे**टी. ले रूपालाई गोलभेंडाबाट भएको आम्दानी-खर्च आदि सबै कुराको रेकर्ड फाराम व्यवस्थापन किताबमा कसरी लेख्ने भनेर सिकाएकी थिइन् । रूपाले सोहीबमोजिम गर्दै गइन् । त्यो किताबमा सबै कुराको टिपोट गरेको भएर नै उनले नयाँ जातको गोलभेंडालाई अलि बढी मिहिनेत गर्नुपर्ने रहेछ, सो गरेमा आम्दानी पनि हुने रहेछ, त्यसैले मूल्य राख्दा ध्यान दिनुपर्ने रहेछ भन्ने थाहा पाइन् । समूह बैठकमा जाँदा छलफलबाट नजिकको बजारमा बेमौसमी गोलभेंडाको मूल्य प्रतिकेजी ६० रुपैयाँ रहेछ भन्ने पनि उनले थाहा पाइन् । रूपाले सोहीबमोजिम आफ्नो बारीको गोलभेंडा (जुन आउँदो हप्ता टिप्न योग्य थिए) लाई ५० रुपैयाँ प्रतिकेजीमा बेच्ने निर्णय गरिन् ।





त्यही क्रममा एक दिन रूपा खेतमा काम गर्न गएकी थिइन् । घरमा श्रीमान् र घरका अरू सदस्य मात्र थिए । सोही बेला 'तपाईंको खेतको गोलभेंडा बेच्नुस् भन्दै' एक जना खरिदकर्ता आए । रूपाका श्रीमान्ले केही कुरा थाहा नै नपाईकन गोलभेंडा ३० रुपैयाँ प्रतिकेजीमा बिक्री गरिदिए । जब रूपा कामबाट घर फर्किन्, बेच्न तयार गोलभेंडा बोटमा नदेखेपछि उनी तीनछक्क परिन् । उनले श्रीमान्लाई गोलभेंडाका बारेमा सोधिन् । श्रीमान्ले उनलाई किन्ने मान्छे आएर राम्रो मूल्य दिएकाले सबै बेचिदिएको जानकारी गराए । बेचेर आएको पैसा कहाँ छ भनेर रूपाले श्रीमान्लाई सोधिन् तर उनले त्यसको कुनै हरहिसाब देखाएनन् । रूपालाई ठूलो धक्का लाग्यो । गोलभेंडा बेचेर आएको पैसाबाट रूपाले घरका लागि अति आवश्यक सरसामान तथा खाद्यान्न किन्ने सोच बनाएकी थिइन् । यति धेरै मिहिनेत र परिश्रम गरेर खेती गरे पनि अन्त्यमा उनले त्यो उपभोग गर्न पाइएनन् ।



### छलफलका लागि प्रश्नहरू

१. यस कथाबाट के बुझिन्छ ?
२. रूपाले व्यावसायिक खेती गर्नु भन्दा अघि के-के कुरा गर्नुपर्थ्यो ?
३. घरका सबै सदस्यले रूपाको काममा सहयोग गरे कि गरेनन् ?
४. श्रीमान्को भूमिका कस्तो हुनुपर्थ्यो ?
५. घरका अरू सदस्यको भूमिका कस्तो हुनुपर्थ्यो ?
६. गोलभँडा बेच्ने क्रममा रूपा र उनका श्रीमान्ले के गर्नुपर्थ्यो ?
७. आएको आम्दानी कसले राख्नुपर्थ्यो ?
८. आम्दानी भएको पैसा केमा, कसरी खर्च गर्ने भन्ने निर्णय कसले गर्नुपर्थ्यो ?
९. राम्रोसँग खेती गर्नका लागि रूपा र उनका श्रीमान्ले के गर्नुपर्थ्यो ?
१०. फार्म व्यवस्थापन किताबको पेज नम्बर ३ हेर्नुहोस्, अनि जीवनयापनका लागि राम्रो हुने गरी कसरी खेती गर्ने श्रीमान्सँग (दुवै जना) सल्लाह गर्नुहोस् ।



## 1.9 Compost Making



### SRC-CAP सिन्धुली सडक खण्ड ब्याबसायीक कृषि प्रबर्धन आयोजना -एरोबिक (अक्सीजन) तरिका द्वारा मल कुहियाउने प्रविधि-



#### १. मल भनेको के हो ?

##### १. माटो नरम बन्छ ।

निरन्तर रुपमा पाकेको मलको प्रयोगले माटोलाई नरम र खुकुलो बनाउन मद्दत गर्छ । यसको लागि २ देखि ३ वर्ष लाग्न सक्छ । पछि, पछि, नतिजा अफ राम्रो हुन्छ ।

##### २. रोगकिराको प्रकोप घट्छ ।

माटोमा पाकेको मलको प्रयोगको सकारात्मक प्रभावबाट बालीमा रोगकिराको प्रकोप घट्छ । यसको प्रभाव पाउनको लागि २ देखि ३ वर्ष लाग्न सक्छ ।

##### ३. बालीको उत्पादनमा बृद्धि

कमपोष्ट मलमा बालीको बृद्धि विकासको लागि आवश्यक थुप्रै खाद्य तत्वहरु पाईन्छ ।



#### २. मल बनाउने सुझावहरु

##### १. उच्च मात्रामा हावाको संचालन

मल कुहिनको लागि उच्च मात्रामा हावाको संचालनको आवश्यक हुन्छ । यदि प्रर्याप्त हावाको संचालन भएन भने, मलमा भएका वस्तु कुहिन समय लाग्न सक्छ ।

##### २. कम चिस्थान

धेरै चिस्थान हुदा मल टासिने र हावाको संचालनलाई पनि रोक्छ । त्यसैले गोबर र पिसाबलाई सके सम्म छुट्याउनु पर्छ र बढि भएको चिस्थान सोस्न सुख्खा फारपात जस्तै पराल आदि मिसाउनु पर्छ ।

##### ३. धेरै मात्रामा सुख्खा फारपात (सोतर)

धेरै मात्रामा पराल अथवा सुख्खा फारपात गोबरमा मिसाउन सकिन्छ । आधा भाग भन्दा धेरै मिसाउदा राम्रो हुन्छ ।

##### ४. खेतबारीमा निरन्तर प्रयोग

कमपोष्ट मलको प्रभाव पाउन समय लाग्न सक्छ । त्यसैले लामो समयसम्म कमपोष्ट मलको प्रयोग गर्नुपर्छ ।

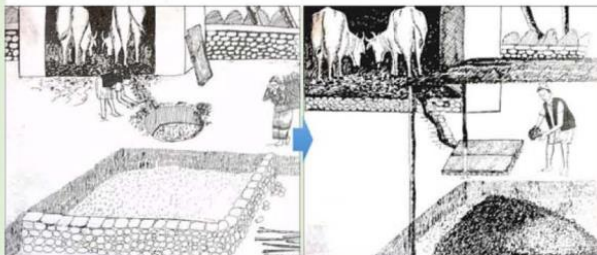
#### ३. दक्षतापूर्वक (efficiently) कसरी मल बनाउने

बढि चिस्थानले मल टासिने र हावा खेल्न नसक्ने हुन्छ। तसर्थ उपयुक्त तरिकाबाट निम्न अनुसार मल बनाउन सकिन्छ ।

- मल बनाउने सामग्रीहरु बाट अधिकतम पानीको मात्रा हटाउने ।
- हावाको आवत जावत बढाउने ।
- मललाई वर्षाको पानी र भल बाट जोगाउने

#### १) मलबाट बढि चिस्थान हटाउने तरिका

- ① सभव भएसम्म मल बनाउने गोबरमा र सोतरमा चिस्थान घटाउन गोबर र पिसाबलाई छुटाछुट्टै सकलन गर्ने ।



- ② मलमा चिस्थानको मात्रा मिलाई सके पछि, मललाई हातमा राखेर मुट्टी पार्दा मल डल्लो नछर्ने भने मलमा चिस्थानको मात्रा धेरै छ । यदि मल हातमा डल्लो नपरी फुक्छ भने मलमा चिस्थानको मात्रा ठीक छ ।



#### २) हावाको संचालन बढाउने तरिका

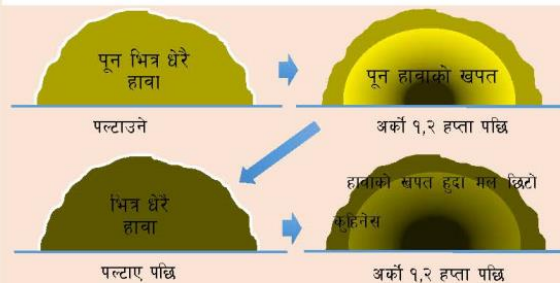
##### [क. मल पल्टाउने ]



- मलको थुप्रोमा हावाको आवत जावत बढाउने एउटा तरिका मल पल्टाउनु हो । मल भित्र रहेका शुष्म जिवले प्रागारिक पदार्थ कुहियाउन तामक्रम बढाएर हावा प्रयोग गर्छन ।

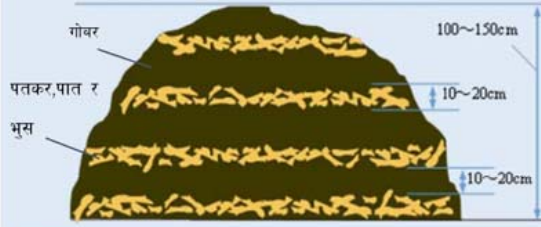
- तापक्रम बढेर शुष्म जिवको क्रियाकलाप तीब्र हुदा कुहिनै प्रक्रिया पनि तीब्र हुन्छ ।

- १ वा २ हप्ता पछि मल कुहिनको लागि थप हावाको आवश्यक पर्छ ।



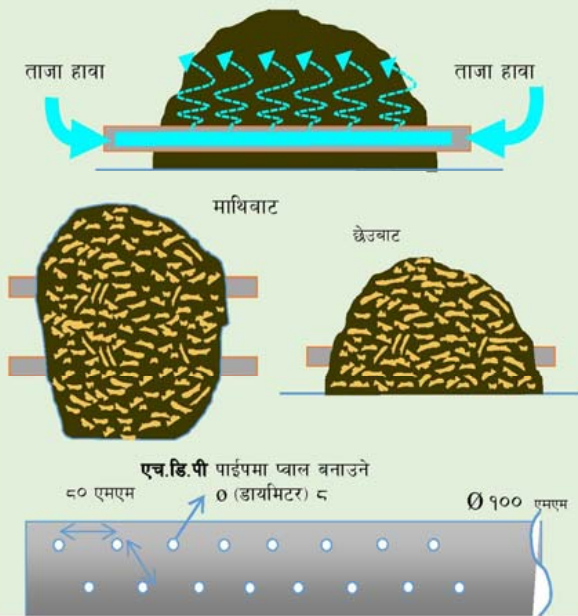
**[ख] धानको भुस र हाँगा विंगालाई मिसाउन ]**

- मलमा धानको भुस र हाँगा विंगालाई (२ देखि ५ से.मि) मिसाउनाले थुप्रो भित्र हावाको राम्रो संचालन भई यसले माटोको अणुहरु विच दुरी कायम राख्छ ।



**[ग] मलको थुप्रोमा एच.डि.पी पाइपलाई राख्ने ]**

मलको थुप्रोको विचमा एच.डि.पी पाइप प्रयोग गर्नाले मल भित्र हावाको संचालन हुन्छ । पाइप भित्र सानो सानो प्वाल बनाउनाले थुप्रो भित्र ताजा हावाको संचालन हुन्छ । यसले मललाई धेरै चोटि पल्टाउन पढैन ।

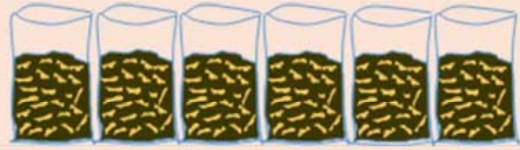


२,३ हप्ता पछि २ वटा पाइपलाई उठाएर थुप्रो उल्टाएर पुन : थुप्रो बनाउने र २ देखि ३ हप्ता कुर्ने



मलको थुप्रो ठूलो हुदा पनि पाइपको संख्या बढाएर यो तरिका प्रयोग गर्न सकिन्छ ।

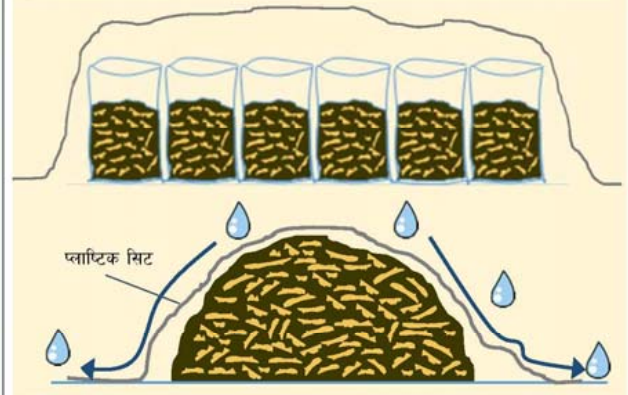
**[घ] जाली भएको भोलामा ]**



यो विधि साना किसानको लागि उपयुक्त हुन्छ । जाली भएको भोलामा मल बनाउदा, भित्र सजिलै हावा संचालन हुन्छ । यो विधिमा मल पल्टाउन जरुरी छैन किनकि यो थुप्रो जति ठूलो हुदैन । मललाई थुप्रो पारेर भन्दा यो तरिकाबाट मल तयार हुन समय लाग्छ किनकि थुप्रोमा भन्दा सानो भोलामा तातोपन उठेर जान्छ ।

**३) मलको थुप्रो छोप्ने —पानी बाट जोगाउन तथा तापक्रम बनाई राख्न ।**

मलको थुप्रोलाई वर्षाको पानी र भलबाट जोगाउन तथा तापक्रम बनाई राख्न प्लाष्टिक सिटले छोप्न आवश्यक हुन्छ ।



**४) मल कुहियाउने सामग्रीहरु**

- मल बनाउदा जनावरको गोबर र सुख्खा पात पतंगरको संयोजन राम्रो हो ।
- राम्रो मल बनाउनको लागि कार्बन र नाइट्रोजनको अनुपात ३०-४०% हुदा राम्रो हुन्छ ।
- छिटो मल तयार हुनलाई धेरै मात्रामा कार्बन अथवा धेरै मात्रामा नाइट्रोजन राम्रो होइन ।

सामग्री	विधि		पानीको अनुपात	पानी	नाइट्रोजन अनुपात	का. र ना. अनुपात	कार्बन	नाइट्रोजन
	केजी	परिमाण	%	%			केजी	केजी
गोबर	१०००	१ क्युबिक मिटर	८६	८६०	०.३५	१६	५६	८६०
पराल	२५०	२.५ भारी (बन्डल)	१५	३७	०.४	६०	६०	३७
सुख्खा पात पतंगर	५०	५ डोको	१५	७५	०.३	१००	१५	७५
धानको भुस	५	१ सानो बकेट	१५	०.७५	२	२३	२.३	०.७५
मिश्रन	१३०५	—	६९	९०५		२८	१३३	९०५



### तरकारी नर्सरी : बैर्ना उत्पादन तथा ब्यवस्थापन प्रविधि

परिचय :

हामीले कस्तो बिउ रोपेर कती स्वास्थ्य बैर्ना उत्पादन गरैकाछौं भन्ने बाट हामी कती उत्पादन गर्न सक्दछौं र कति नाफा लिन्छौं भन्ने निर्धारण गर्द छ।

सामान्यतया विरुवा तयार गर्नका लागि हावा,पानी र तापक्रमबाट नोक्सान हुन नदिन विशेष किसिमको हेरचाह पुर्याई सानो ठाउबाट धेरै विरुवा उत्पादन गर्ने स्थापित क्षेत्र वा थलोलाई नर्सरी भनिन्छ ।

नर्सरीको महत्व

- विरुवा मर्न जाने संभावनालाई कम गर्छ ।
- व्यवस्थापकिय कामलाई निश्चित ठाउमा सिमित गर्दछ ।
- मूल्यवान बीउको उचित व्यवस्थापन गर्दछ ।
- साना बैर्नालाई उपयुक्त स्थान तथा जमिन उपलब्ध गराउदछ ।
- विषम परिस्थितीमा बैर्ना व्यवस्थापन सजिलो बनाउछ ।
- वाली लिने अवधि बढाउछ साथै कम समयमा वाली उत्पादन हुन्छ ।

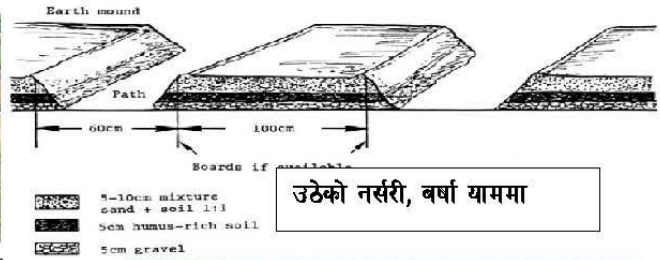
नर्सरीका किसिमहरु : १) मौसमी नर्सरी



समथर नर्सरी : हिउदे मौसममा,सिचाई तथा निकास राम्रो भएको ठाउमा



## खाल्डे नर्सरी र उठेको नर्सरी



उठेको नर्सरी, बर्षा याममा



२। बेमौसमी नर्सरी

खाल्डे नर्सरी, गर्मी तथा सुख्खा याममा

तातो नर्सरी

प्लास्टिक टनल नर्सरी



चिसो मौसममा



हावापानी, घाम, तुषारो बाट बचाई चाहेको समय आवश्यक



लहरे बालीमा तथा मर्ने संभावना बढी हुने



## बीउ उमार्न प्लास्टी सेल ट्रे



### नर्सरीका लागि जग्गाको छनौट तथा तयारी, तापक्रम स्थान, विउ जमाउने तरिका आदि

**नर्सरीका लागि जग्गाको छनौट :** पर्याप्त मात्रामा घाम लाग्ने, पानी नजम्ने तर सिचाई सुविधा भएको, घरनजिक बार बन्देज गर्न सकिने, रोग तथा किराको आक्रमण कम भएको र दोमट तथा मलिलो माटो भएको ठाउ

### **नर्सरी बनाउने तरिका**

जग्गाको तयारी : माटो खुकुलो र दोमट हुनु पर्दछ । माटोमा प्रशस्त मात्रामा प्रागारीक पदार्थ भएको हुनुपर्दछ । माटोमा अलिअलि बालुवा मिसिएको हुनुपर्दछ वा मिसाउनुपर्दछ । छिटै पानी सासेर लिन सक्ने र छिटै थिग्रेर जान सक्ने हुनुपर्दछ ।

### **ब्याडको तयारी**

- ब्याडको लागि छानिएको जग्गा राम्रोसंग खनी १५ से.मी गहिराई सम्म बुरबुराउदा बनाउने ।
- १ मी चौडाई ,आवश्यकता अनुसार लम्बाई तथा जमिनभन्दा १५ से.मी उचाईको नर्सरी बनाउने ।
- जमिनबाट ब्याडलाई उठाउदा सिधा नउठाएर ४५ डिग्रीको कोणमा उठाउने
- खाल्डे नर्सरीको हकमा उक्त नापको खाल्डो खन्ने यसरी खाल्डो खन्दा शुरुको १५ से.मीको माटो एकतर्क तथा त्यसपछिको १५ से.मीका माटो अर्कोतर्क राख्ने ।
- ३० से.मी माटो निकालीसकेपछि शुरुको माटो नर्सरीमा खन्याउने,तलको माटोलाई आलीबनाइदिने ।
- २ ब्याडको विचमा ५० से.मी जति कुलेसोका लागि खालि छोड्ने ।
- ब्याड बनाई सकेपछि प्रति वर्ग मी ४ के.जी पाकेको गोबरमल, ५ग्राम युरिया, ५ डि.ए.पी, ५ ग्राम एस.एस.पी र ५ ग्राम पोटासमल राख्ने । मललाई माटोमा राम्रो सगं मिलाएर कम्तीमा पनि २ दिन राख्ने

### **ब्याडमा बीउ रोप्ने तरिका**

- ब्याडमा बीउ खसाल्दा लाइनमा खसाल्नुपर्छ जसका लागि लाइन देखि लाइनको दुरी ८ देखि १० से.मी राख्नुपर्छ ।
- बीउ १ देखि २ से.मी गहिराईमा खसाल्नुपर्छ ।
- बीउ खसाल्दा बेर्नाको सडन तथा बेर्ना कमजोर हुनबाट बचाउन बाक्लो गरी खसाउ हुदैन ।
- सानो बीउ भए १ भाग बीउमा ४ देखि ५ भाग बालुवा मिसाई एकनासले बीउ खसाल्नुपर्दछ ।
- बीउ कुलेसोमा खसाइसकेपछि हल्का बालुवा तथा माटोले छोपि हातको पंजा तथ कोदालीले हल्कासंग थिचिदिनु पर्दछ ।

- त्यसपश्चात ब्याडलाई पराल तथा सुकेको घासले छोपी दिने तर आजभोली जुटको बौराले छोप्दा उपयुक्त र सजिलो मानिन्छ । अब, हजारीले हल्का तर भिजेगरी पानी दिनुपर्छ ।

#### नर्सरीका ब्यबस्थापनमा ध्यान दिनुपर्ने कुराहरु

- नर्सरी बनाउने जग्गा भौरपात, रोग तथा किटाणु रहित हुनुपर्दछ । रोगरहित बनाउन नर्सरी माटो उपचार तथा विसंक्रमण गर्न आवश्यक हुने
- बेर्नाका साना टुसा देखिन थालेपछि ब्याडको सुकेको सोतर हटाइदिन ।
- अत्याधिक मल,पानी दिई बेर्नालाई हलक्क बढन दिनुहुदैन ।
- ब्याडमा पर्याप्त मात्रामा चिस्यान रहन दिनुपर्छ र बेर्नालाई बलियो बन सिचाईलाई कमश. कम गर्दै गई उखेलनुभन्दा ४ देखि ५ दिन अघि पानी सुकाउनुपर्छ ।
- बेर्ना उखेलनुभन्दा ६ देखि १२ घण्टा अघि प्रशस्त मात्रामा पानी दिई जरा नचुडिने गरी माटो सहित बेर्ना उखेलनुपर्छ ।

#### रोगकिरा नियन्त्रण

बेर्नालाई वर्षातमा हरियो फटेग्रा र हिउद तथा सुखा याममा खैरा फटेग्राले खाएर नष्ट पार्ने हुनाले नर्सरीमा कीटनासक विषादि जस्तै नुभान २ मि लि प्रति लिटर पानीका दरले छर्नु पर्दछ । अथवा गाँउघरमै तयार गर्न सकिने जस्तै साबुन र सुर्तिको फोल, गाईवस्तुको गहुत, नीम आदिको प्रयोग गर्न सकिन्छ । आजकल भाइरसबाट बचाउन थोत्रो भुलले नर्सरीलाई छोपन सिफारिस गरीएको छ ।

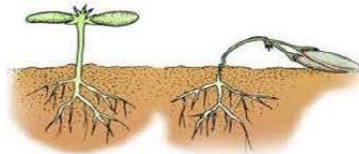
**लाही तथा फटके किरा :** यस किरा नियन्त्रणको लागि रोगर १ मि. लि. प्रति लि. पानीमा मिसाई छर्नु पर्दछ ।

#### बेर्ना कुहिने रोग

विरुवा बाहिर ननिस्कदै कुहिएर मर्ने तथा बेर्नाको फेद कुहिएर बेर्नाको फेदमा औठी आकार बनि सडेर मर्ने रोग हो । माटो उपचार(माटोको निर्मलीकरण)वीउ उपचार, पानीको निकास र दुसीजन्य विषादीको प्रयोग(हुर्केको बेर्नाकोलागि डायथेन एम ४५(२ ग्राम प्रति लि. पानीमा तथा बेभिष्टिन १.५ ग्राम प्रति लि. पानीमा) प्रयोग गर्ने तथा वीउको लागि पनि बेभिष्टीनप्रयोग गर्न सकिन्छ ।

#### पातको डडुवा र थोप्ले रोग

पातमा गोलाकार वा अन्य आकारका खैरा रंगका देखिने वा पात डड्ने रोग नियन्त्रणको लागि डायथेन एम ४५, २ ग्राम प्रति लि. पानीमा मिसाई छर्नु पर्दछ ।



बेर्ना कुहिने रोग



सन्दर्भ सामग्री:

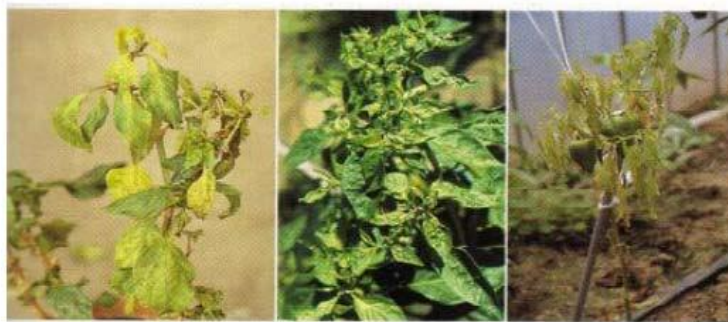
१. डा. सूरेंद्र लाल श्रेष्ठ, बागबानी विज्ञ, ब्याबसायीक तरकारी खेतीको लागी नर्सरी: बेर्ना उत्पादन तथा ब्यबस्थापन प्रविधि
२. अरुण काफ्ले, बरिष्ठ तरकारी विकास अधिकृत : तरकारी नर्सरी ब्यबस्थापन - तालिम ह्याण्ड आउट

## भन्टा, गोलभेंडा र खुर्सानि वर्गका बालीमा लाग्ने रोगहरु

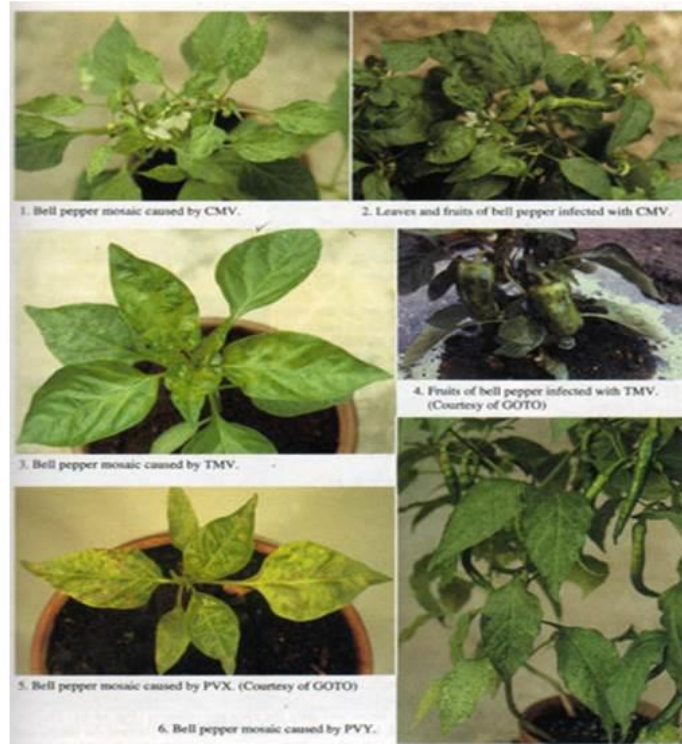
राम कृष्ण सुवेदी

बारिष्ठ बाली संरक्षण अधिकृत

प्लान्ट क्वारेन्टीन एवम- विषादी व्यवस्थापन केन्द्र, हरिहरभवन



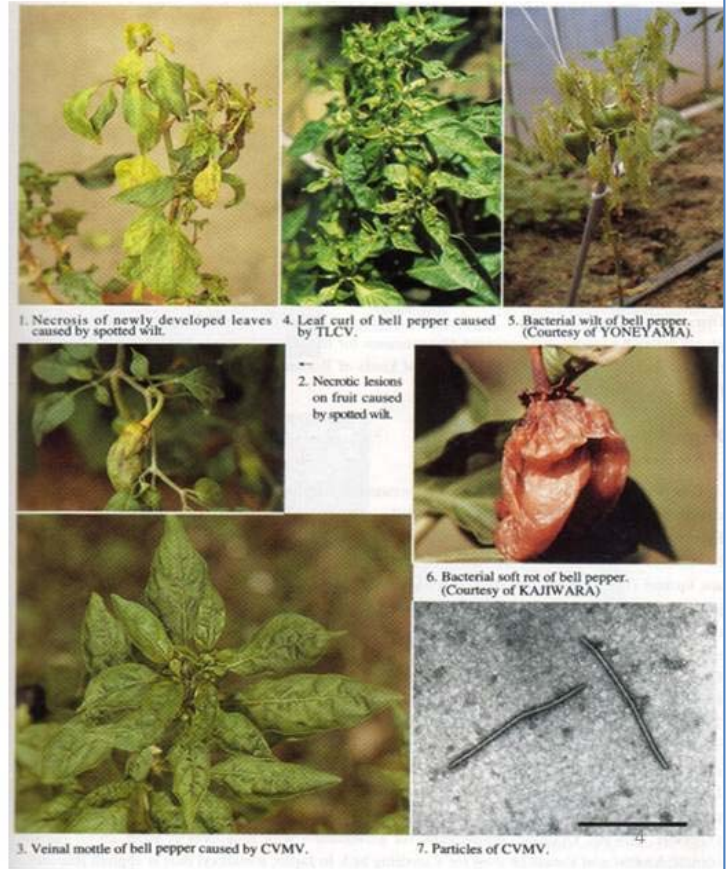
- पातमा हुने पात खुम्चने **CMV** विषाणु रोग ।
- पातमा **TMV** विषाणु रोगको लक्षणहरु ।
- फलमा **TMV** विषाणुको लक्षणहरु ।
- पातमा **PVX** विषाणु रोगको लक्षणहरु ।
- पात र फलमा **CMV** विषाणु रोगको लक्षणहरु ।
- फलमा **TMV** विषाणु रोगको लक्षणहरु ।



Source: SRC-CAP Project

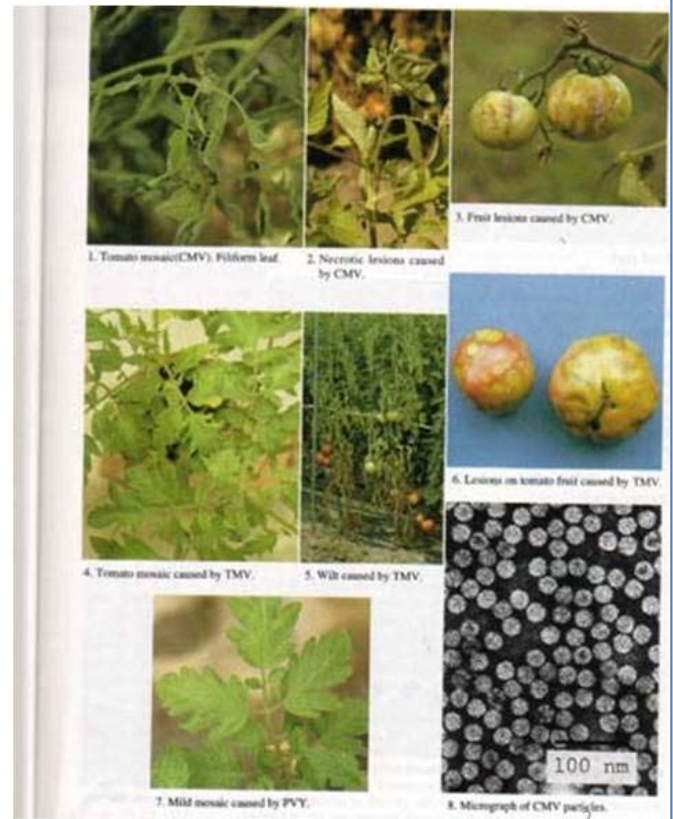


- पातमा विकृती आकारभै **TSWV** विषाणुवाट ओइलाउने रोग ।
- फलमा **TSWV** विषाणुवाट भएको असर ।
- पातका नसाहरु **CVMV** विषाणुवाट खुम्चिएको लक्षण ।
- **TLCV** विषाणुवाट पात वटारिएको लक्षण ।



## विषाणुरोग

- **CMV** विषाणुवाट गोलभेंडाको पातमा देखिएको लक्षण ।
- पात डाँठमा **CMV** वाट भएको **necrotic lesion**
- फलमा **CMV** वाट भएको दाग ।
- **TMV** वाट पातमा बनाएको **Mosaic** रोगको लक्षण ।
- **TMV** वाट वोट ओइलाएको
- **TMV** वाट फलमा भएको दाग को लक्षण ।



## टोमेटो मोज्याक भाईरस

### लक्षणहरु

- साधारणतया पातको हरियो पना भन्दा बेग्लै हरिया र हल्का हरिया भागहरुमा छिरविरे लक्षण देखा पर्दछ,
- बोट विरुवाको वृद्धि राम्ररि हुदैन र फल कम लाग्छ ।

### व्यवस्थापन विधि

- स्वस्थ बोटमा फलेको फलबाट मात्र बीउ छान्ने
- रोगि बोट हटाइ नष्ट गर्ने



### लीफ कर्ल भाईरस

#### लक्षणहरु

- यो रोग खुर्सानि र गोलभेडा दुवैमा देखिन्छ ।
- बोटका पातहरु घुम्नियर माथी तिर फर्कन्छन ।
- पातहरु फिकका पहेंलो र साना साना हुन्छन । खुर्सानिका पातहरु डुङ्गा को आकारमा घुम्न सक्छ ।
- रोगि बोट कम फुलने र फलै नलाग्ने हुन सक्छ ।



#### व्यवस्थापन विधि

- रोग लागेको बोट देखा पर्ना साथ उखेलेर नष्ट गर्ने ।
- यो रोग सेतो सेतो भिङ्गा बाट सर्ने हुनालेले डाईमिथोएट ( रोगर ३० प्रतिसेत) क्फिटनासक विषदि १ घेखि मि.लि. प्रति लि. पानीका दरले प्रयोग गरि त्यसलाई नियन्त्रण गर्ने ।



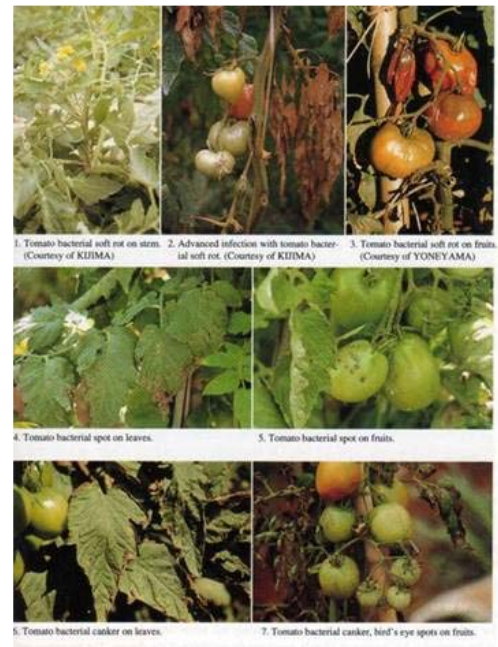
## विषाणु रोगको व्यवस्थापन

- रोगमुक्त विउ र बिरुवाहरुलाई सधै प्रयोग गर्ने गर्नु पर्छ।
- रोग सार्ने **vactor** (जिब) को व्यवस्थापन गर्नु।
- सरसफाइमा ध्यान दिने, रोगी बिरुवा देखापर्नासाथ नष्टगर्ने र सधै सफा राख्ने।
- रोगी बिरुवालाई छुएपछि वा प्रयोग गरेको औजारहरु स्वस्थ बिरुवामा प्रयोग नगर्ने, प्रयोग गर्नु परेमा बिशंक्रमण गरेर मात्र प्रयोग गर्ने गर्नु पर्छ।
- ताजा गाइको दुध २० मि.लि. प्रति लि . पानीमा मिसाइ १५ दिनको फरकमा प्रयोग गर्ने।
- भोलमल वा पशुको गहुंत १०-१५ भाग पानी मिसाइ ७-१० दिनको फरकमा नियमित रुपमा छर्ने।

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## फलवालीमा लाग्ने शाकाणु रोगहरु

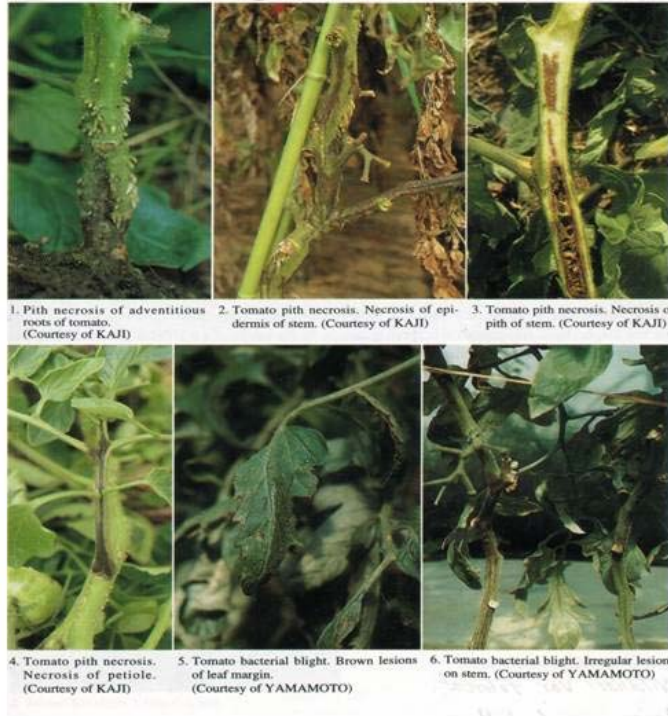
- गोलभेंडामा *Erwinia carotovora* गिलो सडने रोगको जिबाणुवाट डांठमा गिलो सडने रोगको प्रकोप।
- गोलभेंडाको फलमा गिलो सडने रोग।
- गोलभेंडाको पातमा शाकाणु *Xanthomonas campestris* जिबाणुवाट भएको दाग।
- शाकाणुको दाग फलमा।
- पातमा शाकाणुको **canker**
- फलमा शाकाणु **canker** को दाग।



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## गोलभेंडामा शाकाणुको लक्षण

- गोलभेंडाको फेँद र जरामा **pith necrosis** शाकाणु *Pseudomonas corrugata* बाट भएको ।
- गोलभेंडाको डाँठमा **pith necrosis** र **petiole** मा **necrosis** शाकाणुवाट ।
- गोलभेंडाको पातमा *Pseudomonas viridiflava* शाकाणु डढुवा बाट भएको दाग ।
- डाँठमा शाकाणु डढुवाको **irregular** दाग ।



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## खुर्सानी वालीमा लाग्ने शाकाणु

- खुर्सानीको पात र फलमा *Xanthomonas campestris* शाकाणु रोगको लक्षण ।
- वोट र डाँठमा डढुवा *Phytophthora capsici* दुसीबाट भएको लक्षण ।
- *P. capsici* को जीवाणु ।



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## सर्ने माध्याम



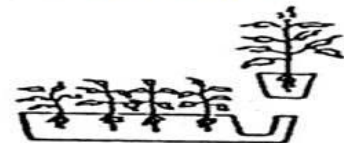
(A) Soil and roots



(B) Wounds



(C) Irrigation or flowing water



(D) Contaminated transplants



(E) Boots and human movement



(F) Tractors and other machinery

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## व्यवस्थापन

- तोरिको पिना र मल को प्रयोग
- धान सँग घुम्तिवाली
- १ देखि ३ हप्ता अघि खेत हिल्याउने
- कन्टकारि, वा अवरोधक जातसँ ग्रप्टिग
- पनिको राम्रो निकास
- सोलानेसि परिवारको बाहेक अन्य बाली सँग घुम्ति बाली सँग घुम्ति बाली लगाउने ।



## शाकाणु रोगको व्यवस्थापन

- रोग मुक्त विउ र बिरुवाहरु सधै प्रयोग गर्ने ।
- कम्तिमा पनि ३-४ वर्षको घुम्तेवाली प्रविधी प्रयोग गर्ने ।
- बाली लगाउने जमिनमा **solarization** गर्ने ।
- बिरुवालाई सधै स्वस्थ्य राख्न मल / जलको राम्रो व्यवस्था गर्ने ।
- शाकाणु नासक विषादी प्रयोग गर्ने ।
- सरसफाइ राख्ने र रोगी बिरुवा संकलन गरी नष्ट गर्ने ।
- माटोको **Ph** सुधारने / पशुको गहुंत र भोलमल नियमित छर्ने ।
- घुम्ते बालीलाई प्रोत्साहन गर्ने ।



## दुसीजन्य रोगहरु



### पछौटे डढुवा रोग

कारक: *फाइटोपथोरा इन्फेस्टान्स* नामक दुसि

लक्षण:

- ✓ शुरुको अवस्थामा पातको टुप्पा वा किनारामा सानो खैरो भिजको जस्तो दाग देखापर्छ,
- ✓ पातको पछाडिपट्टि सेतो भुवाजस्तो दुसि देखिन्छ
- ✓ रोग डाँठ र दानामा पनि लाग्दछ
- ✓ अन्त्यमा पुरै बोट सुकेर मर्दछ र डढेको जस्तो देखिन्छ
- ✓ माटोमा भएका दुसिका बिजाणुहरु हावाद्वारा फैलिइ पातमा र अन्य जमिनमाथिका भागहरुमा आक्रमण गर्दछन् ।



1. Tomato field infected with late blight.

3. Tomato late blight. Conidia (sporangia) formed on leaf.

4. Tomato late blight. Lesions on stem.

2. Tomato late blight. Lesions on leaf.

5. Tomato late blight. Lesions on fruits.

## रोगका लागि वातावरण

- ✓ चिसो मौसम र ८० प्रतिशत भन्दा बढी सापेक्षित आद्रता
- ✓ धेरै उपयुक्त वातावरणका लागि चार मुख्य मौसमी अवस्था

- (क) कम से कम ४ घण्टा सम्म रातमा शीत परेको,
- (ख) कम से कम १० डिग्री से.वा सो भन्दा अलिकति माथिको न्यूनतम तापक्रम भएमा,
- (ग) भोलिपल्ट वादल लागेमा,
- (घ) २४ घण्टा भित्र अलि अलि वर्षा



## व्यवस्थापन

- ✓ पुरानो बोटको अवशेष, नावो विरुवा तथा झारपात हटाइ सफा राख्ने
- ✓ बोट रोप्दा एक आपसमा पछि बोटहरू नजोडिने गरी लगाउने,
- ✓ वेर्ना रोप्दा म्यान्कोजेव(२ ग्र/लिटर पानी) ले उपचार गरेर मात्र रोप्ने,
- ✓ घुमि बाली प्रणालि अपनाउने।
- ✓ पकेको गोबरमल १ मे टन मा २.५ के जी टाइकोडर्मा जैविक विषादी मिसाई प्रति रोपनी प्रयोग गर्ने।
- ✓ म्यान्कोजेव (डाइथेन एम-४५) वा कपरअक्सीक्लोराइडको २.५ ग्र/लिटर
- ✓ रोग धेरै बढेमा मेटाल्याक्सिल ८+म्यान्कोजेव ६४ (किनोक्सिल गोल्ड) १.५ ग्र/लिटर पानी वा डाइमथोमर्फ ५० प्र WP वा फेनामिडिन १० प्र + म्यान्कोजेव ५० प्र WP २ ग्राम प्रति लिटर स्प्रे

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## अगौटे डढुवा

कारक: *अल्टरनेरिया टुसि*

लक्षण:

- ✓ विरुवाका पुराना पातमा शुरु
- ✓ चक्रिय धब्बा
- ✓ खैरा धब्बा वरिपरि पहेलो
- ✓ गोला लाम्चा आकृतीका धब्बा बढदै जादा पातहरू झर्ने तथा बोट डढेको देखिने
- ✓ फलमा पनि लागेमा चक्रिय धब्बा, दवेको खैरो धब्बा, भेटनाको छेउमा बढि र भेटनो नेर वाट फल झर्ने।



1. Tomato early blight. Leaf lesions.

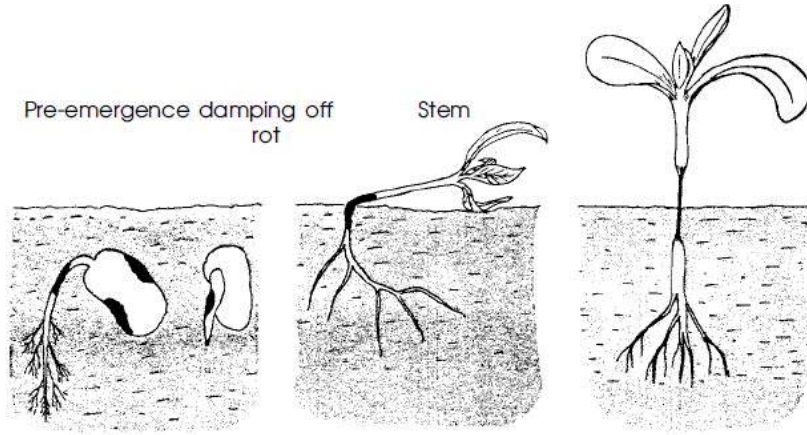


Figure 4. Early blight rot on foliage

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## बेर्ना कहिने रोग



व्यवस्थापन

- बाक्लो बेर्ना नराख्ने
- गरिअरोगारि खनजोत गर्ने
- सोलराइजेसन
- वालीका भ्यासमिस हटाउने वा जलाउन

- बढी मात्रमा राम्रि कुहिएको गोबरमल (१५ देखि २० टन प्र हे.
- ३० से.मि भन्दा तलको माटो नर्सरिमा
- पानिको निकास
- संजीवनि
- डाइएथि एम ४५

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## ओइलाउने रोग

- ओइलाउने रोग **Fusarium oxysporum** को पहिलो लक्षण ।
- रोगको प्रकोप बढि भएपछिको लक्षण ।
- **Fusarium wilts** को काटिएको डाठमा देखिएको लक्षण ।
- जरा कुहेर ओइलाउने रोग पांत र डांठमा ।
- जरा कुहेर ओइलाउने रोगको लक्षण जरामा ।





पाउडरी मिल्डयु



*Phytophthora capsici*



## गाँठा पर्ने रोग

### लक्षणहरु

- बोट सानो र ख्याउटे भई बढ्न सक्दैन र पातहरु पहेंलेलिएर झर्न थाल्छ।
- त्यस्ता बोटको जरामा साना गिर्खाहरु बनेका हुन्छन् जसले गर्दा पछि बोट ओइलाउन्छ।

### व्यवस्थापन विधि

- खेतको खनजोत गहिरो संग गर्ने।
- मुख्य बालीसंग सुर्यमुखि, सयपत्रि जस्ता फुलको बोटहरु रोप्ने।
- रोगि बोटहरु उचित तरिकालो नष्ट गर्ने
- अन्न बाली संगघुमि बाली अपाउने।
- लेन्टेना केमराका पात डाठ टुक्रा पारी माटोमा मिसाउने



## खाद्य तत्व



पोटास को कमी



क्याल्सियमको कमी



म्याग्नेसियम को कमी







फलाम को कमी



फसफोरस को कमी



क्यालसियमको कमी



नाइटोजनको कमी



क्यालसियमको कमी

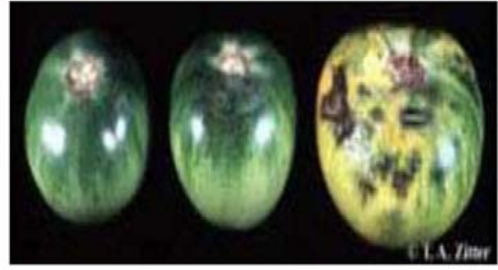


म्याग्नेसियमको कमी

## विकृती



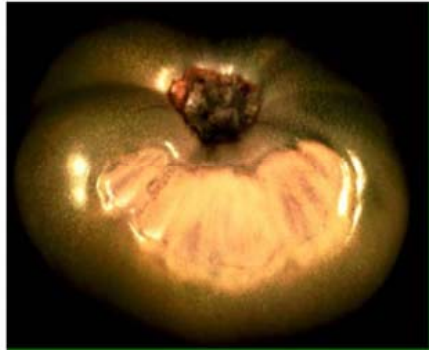
क्याटफेस



फ़ॉट रसेटिं



फ़ॉट केक



सन स्केल्ड



गुदी धेरै



## काँक्रो फर्सि समूहका वालीमा लाग्ने रोगहरु

राम कृष्ण सुबेदी  
बारिष्ठ बाली संरक्षण अधिकृत  
प्लान्ट क्वारेन्टीन एवम- बिषादी ब्यवस्थापन केन्द्र, हरिहरभवन



## काँक्रो फर्सि समूहमा लाग्ने बिषाणु रोग

कुकुम्बर मोजाइक भाइरस (CMV)

- पातमा हरियो फिका पहेँलो छिन्नबिरे लक्षण देखापरी वोट बढ्न सकदैन र प्रकोप धेरै भएमा वोट बढ्न सकदैन ।
- प्रकोप धेरै भएमा वोटका टुप्पाहरुमा गुज्मुजीएको लक्षण देखा पर्दछ ।





## CGMMV /ZYMV

- पात र फलमा **CGMMV** विषाणुवाट भएको बिकृति ।
- पात र वोटमा **ZYMV** विषाणुवाट पातमा पहेलो भै खुम्चिएको र वोट ओइलाएको लक्षण ।



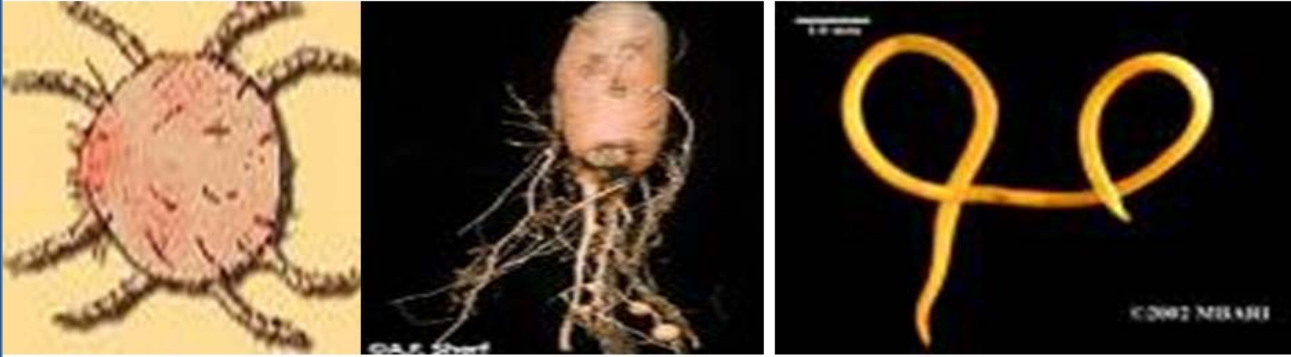
3

## तरकारी वालीमा भाइरस जनित रोगहरुको व्यवस्थापन

- भाइरस जनित तरकारीमा लाग्ने रोगहरुका लक्षणहरु धेरै प्रकारका छन् । जस्तै पात खुम्चिने, छिर्केविर्के, थोप्लाहरुहुने, पात पहेलिने, विरुवा होचो, धेरै हागाविगा निस्कने आदि । विरुवामा एकैपटक धेरै किसिमका भाइरसहरुले आक्रमण गर्न सक्दछन र यस्तो अवस्थामा विभिन्न लक्षणहरु देख्न सकिन्छ । भाइरस संक्रमित वोट विरुवावाट यान्त्रिक तरिकाले वा रोगको जिवाणुवाहक किरा(Insect vector)वाट सर्दछ । vector ले सार्ने प्रकृया पनि २ किसिमको हुन्छ ।

4

## भाइरस सार्ने भेक्टर



5

## वोट विरुवामा भाइरस सार्ने विधि

- भाइरसले विरुवाको **cell** मा पसेपछि **cell** भित्र वाचेर रहिरहन सक्दछ। यस वाहेक वीडमा,भारपात , र वाहक किरामा भाइरस रहन सक्दछ। यस्तै तलका तरिकाहरुवाट पनि भाइरस फैलन्छ।

- १) विरुवा भित्र कोषवाट कोषमा आन्तरिक प्रवाहवाट ।
- २) रोगि विरुवाको रसवाट स्वस्थ विरुवामा रगडेर ।
- ३) ग्राफ्टिड ,वडिड गरेका वेर्ना सार्दा ।
- ४) परजिवि विरुवाहरु(एजेरु) वाट ।
- ५) वीड र पराग वाट ।
- ६) चुसाहा किराहरुवाट ।
- ७) माटोमा बस्ने किरा,निमाटोड, ढुसिवाट ।

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## व्यवस्थापन

- १) स्वस्थ बीउको छनोट ।
- २) रोग नलागेको क्षेत्रको बीउ प्रयोग गर्ने ।
- ३) वेर्ना विरुवाका कटिडहरु रोगमुक्त क्षेत्रको मात्र प्रयोग गर्ने ।
- ४) **Tuber indexing**
- ५) रोग सार्ने किराहरुवाट जोगाउने।
- ६) **Host free period** मा खेति गर्ने ।
- ७) रोगी विरुवालाइ हटाउने ।
- ८) रोग सार्ने भारपात हटाउने ।
- ९) तातोपानीले बीउ उपचार ( ५२से० । ३० मिनेट) ।
- १०) **Immunization**

7

## कांका फर्सी समूहको बालीमा शाकाणु रोग

### ➤ ***Xanthomonas campestris***

शाकाणु रोगबाट भएको थोप्ले रोग ।



### ➤ पात र फलमा शाकाणु

***Pseudomonas syringae*** वाट भएको थोप्ले रोग ।



8

- पातमा  
*Erwini*  
*a*  
*trachei*  
*phila*



शंकाणु  
रोगवाट  
देखिएको  
लक्षण ।



9

## शाकाणु रोगको व्यवस्थापन

- रोग मुक्त विउ र बिरुवाहरु सधै प्रयोग गर्ने ।
- कम्तिमा पनि ३-४ वर्षको घुम्तेवाली प्रविधी प्रयोग गर्ने ।
- बाली लगाउने जमिनमा **solarization** गर्ने ।
- बिरुवालाई सधै स्वस्थ्य राख्न मल / जलको राम्रो व्यवस्था गर्ने ।
- शाकाणु नासक विषादी प्रयोग गर्ने ।
- सरसफाइ राख्ने र रोगी विरुवा संकलन गरी नष्ट गर्ने ।
- माटोको **Ph** सुधार्ने / पशुको गहुंत र भोलमल नियमित छर्ने ।
- घुम्ते बालीलाई प्रोत्साहन गर्ने ।

10

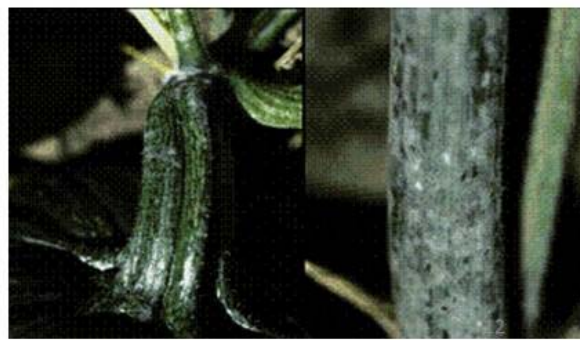


## कांका फर्सी समूहको बालीमा ढुसीजन्य रोग



## पाउडरि मिल्डेयु

- यो एरीसाइफी सीकोरोशियारम (*Erysiphe cichoroacearum*) नामक ढुसीको कारण लाग्ने रोग हो ।
- यसले काँक्रो, फर्सी तरकारी समूह बाहेक अन्य बालीहरु जस्तै आलु, सुर्यमुखी, सुर्ती, आँप आदि बालीहरुमा पनि आश्रय लिन्छ ।
- यो रोग नेपालको पहाड र तराई दुवै क्षेत्रमा यत्रतत्र फैलिएको पाइन्छ ।





## लक्षणहरु

- शुरुमा पातको माथिल्लो सतहमा साना, कल्का सेता वा कैला धब्बाहरु देखापर्दछन् ।
- रोगको आक्रमण बढ्दै जाँदा पातको तल्लो सतह र डाँठमा समेत धुलो पाउडर छरेको भैं सेतो ढुसीहरु फैलिएको हुन्छ ।
- रोग छिप्टिप्टि गएपछि बिरुवाको अन्य भागहरुमा पनि यस्तै प्रकारको लक्षण देखिन्छ,
- रोगी पातहरु पहेंलिन्छन्, घुमिन्छन् र सुक्न थाल्छन् ।
- साधारणतया यो रोग फूल फुल्ने बेलामा बढि लाग्दछ ।

## रोगको व्यवस्थापन

- खेतबारी सधैं सफा सुग्घर राख्ने । पुराना ठुटाहरु जम्मा गरेर जलाइदिने ।
- छिटो पाक्ने जातको फर्सी तरकारी समूहको बाली लगाउने । यसो गर्दा रोगको बढि आक्रमण गर्ने समय छल्न सकिन्छ ।
- गन्धक विषादी २० किलो प्रति हेक्टरका दरले १५/१५ दिनको फरकमा बालीमा छर्कने ।
- गन्धक र चूनको मिश्रण (१ भाग गन्ध ३ भाग चून) मिसाएर धूलो विषादी छर्किनाले पनि यो रोगको नियन्त्रण हुन्छ ।
- काराथेन प्रयोग गर्ने



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## डाउनि मिल्ड्य

- ढुसी जन्य रोग हो
- यो काँक्रो फर्सी तरकारी समूह मा लाग्दछ
- धेरैजसो न्यानो र चिस्यान बढि भए यो रोग फैलिएको छ ।
- नेपालमा यो रोग पहाड र तराई दुवै क्षेत्रहरुमा फैलिएको छ ।

## लक्षणहरु

- यस रोगले आक्रमण गर्दा शुरुमा पातको माथिल्लो सतहमा चहकिलो पहेंलो थोप्लाहरु देखा पर्दछन्
- पातको तल्लो सतहमा कैलो कालो रडका ढुसीका थुप्राहरु देखिन्छन्
- विस्तारै थोप्लाहरु हल्का खैरो र अन्तमा कालो खैरो रडमा परिणत हुन्छन्
- बढि आर्द्रता (चिस्यान) रहेको मौसममा पातको तल्लो सतहमा बैजनी रडले ढाकिएको ढुसीहरु प्रष्ट देखिन्छन् ।
- रोग लागेका पातहरु सुक्न थाल्दछ र पछि गएर बोटहरु मर्न सक्दछन्
- पानीको थोपाको माध्यमबाट वा खपटे कीरा को सहायताले सर्छ



14

## रोगको व्यवस्थापन

- तीनवर्ष सम्मको घुम्तिबाली प्रणाली अपनाउने । काँक्रो-फर्सी समूहका बाली बाहेक अन्नबाली, कोसेबाली वा अन्य तरकारीहरु पनि लगाउने ।
- खेतबारी सफा-सुग्घर राख्ने । पुराना ठुटाहरु उखेलेर जलाउने ।
- थाइराम विषादी २ ग्राम प्रति किलो बीउको दरले बीउको उपचार गर्ने ।
- क्रिल्याक्सील वा वेभिष्टिन १-२ ग्राम प्रति लिटर पानीको दरले मिसाई खेतबारीमा १५ दिनको फरकमा बोटमा राम्रोसँग पर्ने गरी छर्कने ।



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## कोत्रे रोग

- काँक्रोको पात र फलमा देखिएको कोत्रे *Colletotrichum lagenarium* दुसी रोगवाट भएको क्षति ।



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## *Phytophthora spp* ढुसी को सडन

- पात र फलमा देखिएको *Phytophthora spp* ढुसीवाट भएको लक्षण ।



17

## व्यवस्थापन विधि

- दुई तिन वर्ष लहरेवाली, खुर्सानि र टमाटर खेति नगरिएको खेत
- पनिको निकास
- ड्यागमा खेति
- बढि सिंचाई लाई निषेध
- भिजेको खेतमा काम नगर्ने
- संक्रमित भागलाई हटाउने
- डाईथेनियम एम ४५ छर्ने

18

## ओइलाउने रोग

- बोट र डांठमा ओइलाउने *Fusarium oxysporum* लगाएत दुसीवाट भएको क्षति ।
- *Verticillium dahliae* वाट पुरै बोट ओइलाएको



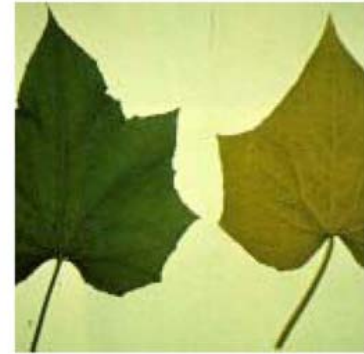
## खाद्य तत्वको कमी



क्यालसियमको कमी



फलामको कमी

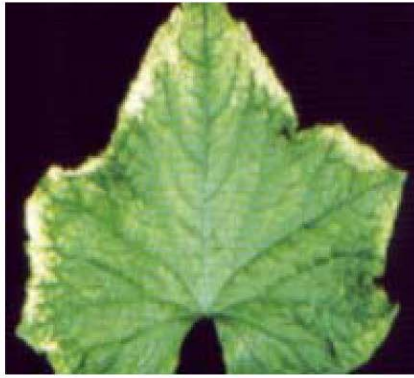


नाइट्रोजनको कमी



बोरनको कमी





मोलेब्डेनमको कमी



पोटासियमको कमी



म्याग्नेसियमको कमी



सल्फर वढि

### अन्य असर



चिसो वढि



नुन वढि



विषादी वढि



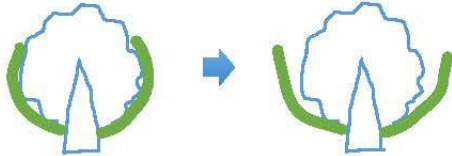
**SRC-CAP**  
**सिन्धुलि सडक खण्ड ब्यवसायिक कृषि प्रवढन परियोजना**  
**- तरकारी बाली टिपाई पछिका कार्य तथा बजारीकरण-**



**१. तरकारी बाली टिपाई तथा प्याकेजीङ**

**१-१. तरकारी बाली टिपाई तथा कटाई (सबै तरकारीका लागि)**

➤ बाली पाकेको (परिपक्व) समयमा कटानी गर्ने ।



➤ दिन भरिमा समय मिलाएर टिप्ने गर्ने (सबै तरकारीका लागि)

- १. चर्को घाम लागेको समयमा टिप्ने गर्दा :  
=>बोटमा रहेको गुलियो पदार्थ बालीले खानाबनाउनप्रयोग गर्छ =>जसले गर्दा बाली कम स्वादिलो हुन्छ ।
- २. बिहानको समयमा टिप्ने गर्दा :  
=>बालीमा शित जम्मा हुन्छ र प्याकिङ गर्दा पानीले बिगार्दछ ।

बिहान शित ओबाए पछि अथवा अपराह्न कटानी गर्दा :  
=>बाली धेरै समय सम्म रहन्छ र धेरै मिठो स्वाद हुन्छ (धेरै मात्रामा गुलियो पदार्थ संचित रहन्छ)  
=>राम्रो गुणस्तर र धेरै आमदानी हुन्छ ।



**१-२. खान नमिल्ने भागलाई हटाउने (सबै तरकारीका लागि)**

उदाहरण : काउली टिपाईको समयमा करिब १२ देखि १५ पात => थोरै मल्य

४,५ पात बाकी राखि अरु हटाउने

ब्यापारिले काउलीको बढि भएको पात निकाल्दै



**१-४. तरकारी धुने (जरा सहितको/जरे तरकारी )**

माटो नपखालेमा => कम मूल्य



जरालाई राम्रोसँग पखाल्दा => बढी मूल्य

बगिरहेको पानीमा हरियो प्याजको जराको माटो पखाल्दै



**१-५. प्याकेजीङ**

➤ भोलाको अकार (काको, लोका, मुला, काउली आदि..)

५० के.जी.



२० देखि ३० के.जी को भोलामा राख्दा तरकारीमा कम क्षति

काउली ठुला भोलाहरुमा ढुवानी गर्दा काउलीका फूलहरु त्यसका पातले छोपिएका हुन्छन भने अरु तरकारी जस्तै काको र लोका ठुलो भोलामा ढुवानी गर्दा सिधै क्षति पर्छ ।



**१-३. छनोट (सबै तरकारीका लागि)**

छनोट नगरेमा (सस्तो मूल्य)



१) बिगेको रोग तथा किरा लागेको र साना तरकारी लाई हटाउने ।  
२) तरकारीलाई त्यसको आकार अनुसार छुट्याउदा आर्कषक देखिनुका साथै बढि मूल्य पाउँछ ।



**नोट/टिप्पणी**

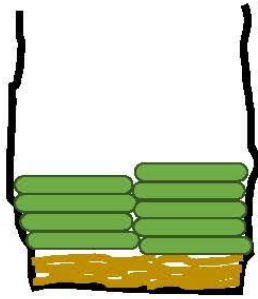


➤ **भोलाको सबै भन्दा मुनी तिर : (काको, लौका, मुला, काउली बादि...)**

कुनै गढी नराख्दा  
=> तरकारीलाई अती पुग्छ ।



गढीको रूपमा (भोला, बोरा, डोको) चामलको भुस, बालीका बाकि रहेका भागहरु र कार्डबोर्डहरु प्रयोग गर्न सकिन्छ ।



➤ **भोला/बोरामा हावाको संचालन (सबै तरकारीका लागि)**

राम्रो सँग हावाको संचालन नहुदाँ

- १) भोला/बोरा भित्र धेरै गर्मी र चिस्यान जम्मा भई तरकारीलाई बिगानी सक्छ ।  
२) सितको मात्रा धेरै भएमा तरकारी कुहिने प्रक्रिया सुरु हुन्छ ।

- १) जाली भएको भोला/बोरा प्रयोग गर्न सकिन्छ ।  
२) अथवा पोलेथिनको भोलामा प्वाल पार्न सकिन्छ ।



जाली भोला



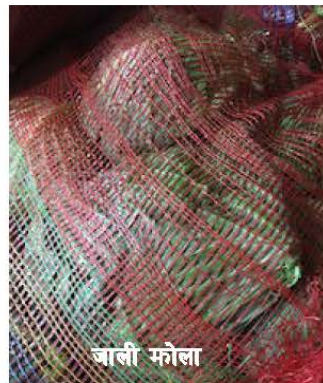
भोलामा प्वाल

➤ **प्रत्यक्ष देख्न सकिने (सबै तरकारीका लागि)**

भोला/बोरा भित्र प्रत्यक्ष देख्न सकिन्छ => व्यापारीरुले तरकारीको गुणस्तरमा संका गर्छन ।



यसका लागि जाली भएको भोला/बोरा प्रयोग गर्न सकिन्छ । जाली बोराहरु बजारमा उपलब्ध छन ।



जाली भोला

**२. बजारीकरण**

**२-१. गुणस्तर (सबै तरकारीका लागि)**

गुणस्तरको बारेमा केहि जानकारी नभए र केहि सुधार नगरेमा श्रोै मुख्य जानकारी लिनु पर्ने जस्तै तरकारीको आकार, रड, ताजापना, अती र स्वाद ।

**२-२. परिमाणको महत्व (सबै तरकारीका लागि)**

श्रोै मात्रा भएमा खर्च बढन्छ बिक्रीमा समस्या आउँछ ।  
=> हुवानी र योजना बढ उत्पादन । सम्भव भएमा सामुहिक बजारीकरण

**२-३. बजारीकरणको माध्यम (सबै तरकारीका लागि)**

- दलाल भएमा प्रतिस्पर्धा नभएको बजारमा फाईदा लिने गर्छन ।
१. बजारीकरणका लागि अरु माध्यमहरु खोज गर्ने जस्तै काठमाडौंको बजार ।
  २. निरन्तर रूपमा फोन गरी बजारको भाउ चेक गर्ने ।
  ३. भुक्तानी गर्ने समय र तरीका (नगद, उधारो.....) चेक गर्ने

**२-४. बजारको प्रतिस्पर्धा**

- कुनै बिचौलियाले लगातार रूपमा उत्पादकहरुलाई ठगेको महसुस भएमा, परिणाम स्वरुप उसको तरकारी आपूर्ति गर्ने स्रोत हटन सक्छ र उसको व्यापार पनि घटन सक्छ ।
- तसर्थ ठनु अमान्य हो र यस्ता बानी ले उसले आफनो चिहान आफै खन्छ यदि बजार पुर्ण प्रतिस्पर्धी छ भने ।
- यसको विपरित, पुर्ण प्रतिस्पर्धा नभएमा, उत्पादकले आफनो बस्तुको खास गून्य थाहा नपाउन सक्छ र ठगी भएको गहशुस हुन सक्छ ।
- पुर्ण प्रतिस्पर्धी बजारमा – भाउ व्यापारका विभिन्न पक्ष वा क्रियाकलापहरु र कारणहरुले गर्दा तय हुन्छ ।
- स्थानिय बजारहरुमा तरकारीको मात्रा बिक्रि हुने र काठमाडौंमा बिक्रि हुनेमा ठुलो फरक हुन्छ । (ठूलो बजार जस्तै कालिमाटीमा)
- ठुला बजारका व्यापारीहरुलाई बजारको खास मुल्य थाहा हुन्छ, जस्ले गर्दा उनीहरु छल गर्न सक्दैनन ।
- त्यसैले विभिन्न बजारहरुको भाउ फोन बाट बुझनु आवश्यक हुन्छ ।

## **Annex 1 : Condition of Support and Procedures**

### **1. Condition of support:**

Terms and conditions for the items are given below:

- ✓ Maximum of NRs. 200,000 per Farmer Group per year will be supported for agricultural inputs/equipments and infrastructure facilities from the project in 50% cost sharing in kind or cash of the farmer group in accordance with their Action Plan. The duration of the support year will be two years.

### **2. Procedure for agri-input category**

#### **2.1 Agri-Inputs**

Cost of the plastic sheet for the plastic house construction will cover by Project but other construction expenses like purchasing of binding wire, nails, enamel, string, bamboo and cost of unskilled labor should bear by the farmer group.

Farmer group should bear fifty percent of total cost for other agri-inputs like seed, pesticides, micronutrient, chemical fertilizer, sprayer, watering can, crate, weighing machine, drip and sprinkler irrigation set etc.

##### **2.1.1 Finalization of material quantity:**

Farmer group should first decide the quantity collectively and deadline of procurement based on group action plan prepared.

##### **2.1.2 Selection of horticulture related traders (buyers and agricultural input suppliers):**

- ✓ Nominated (two members: one male one female) members from each farmer group will visit market and fill the quotation form (annex-1) from at least three available horticulture related traders within or outside the district and whichever they found the lowest in price that will be a candidate supplier.

*Note:*

*1. If two or three groups from a Municipality/Rural Municipality are demanding agri-inputs, they will collect quotation jointly and will choose only one agri-Input supplier whenever possible depending on accessibility and location of farmer groups.*

*2. Project will provide travel and one day daily allowances (without accommodation) for the quotation collection.*

- ✓ Farmer group will discuss on the collected quotation organizing group meeting after returning back from market and select only one agri-input supplier. The evaluation basis for the supplier selection is the lowest total cost of the total item filled in the quotation form.
- ✓ Farmer group should make a decision minute and submit the photocopy to the project office together with collected quotations.

##### **2.1.3 Contract with agri-input supplier:**

Once photocopy of decision minute and collected quotation is received, a contract (annex-2) among project, farmer group and agriculture section of municipality/rural municipality will be made with selected agri-input supplier as soon as possible.



#### 2.1.4 Payment process:

After the contract signed, first installment payment, 70% of the total cost will be handed to the agri-input supplier. Farmer group should pay their sharing amount at the time of agri-inputs received. Remaining 30 % amount will be provided as a final installment payment to the agri-Input supplier after the delivery of agri-inputs to the farmer group's place, receiving signed recipients from farmer group, bill and payment request letter from the agri-input supplier.

#### 2.1.5 Transportation:

- ✓ Agri-Input supplier should responsible to deliver agri-inputs to the farmer group's place and should quote one time delivery cost and means of transportation in the quotation form.
- ✓ Agri-Input supplier should be able to deliver all the agri-inputs in a given deadline.
- ✓ The transportation cost can be paid full by project (if it is less than or 5% of total cost) or cost shared with the farmer group member (if it is more than 5%).

### 2.2 Equipments (Mini Tiller)

Farmer group should bear fifty percent of total cost for the Mini Tiller.

#### 2.2.1 Finalization of Mini Tiller

- ✓ Farmer group should first decide the capacity of the Mini Tiller and deadline of procurement based on action plan among the group. Mini Tiller should be gender friendly.

#### 2.2.2 Selection of Machinery shop

- ✓ Nominated (two members: one male one female) members from each farmer group will visit market and fill the quotation form (annex-1) from at least three available machinery shops within or outside the district and whichever they found the lowest in price that will be a candidate supplier.

*Note:*

*1. If two or three groups from a Municipality/Rural Municipality are demanding Mini Tiller, they will collect quotation jointly and will choose only one shop whenever possible depending on accessibility and location of farmer groups.*

*2. Where the machinery shops are not available within the district, Project will provide travel and daily allowance of one and one fourth day (with accommodation) for the market survey. If the shops are available within the district then travel and one day daily allowances (without accommodation) will be provided.*

- ✓ Farmer group will discuss on the collected quotation organizing group meeting after returning back from market and select only one machinery shop. The evaluation basis for the supplier selection is the lowest total cost of the total item filled in the quotation form.

#### 2.2.3 Contract with Farmer group

- ✓ Farmer group should make a decision minute and submit the photocopy to the project office together with collected quotations.
- ✓ Once photocopy of decision minute and collected quotation is received, a contract (annex-2) among project, farmer group, machinery shop and agriculture section of municipality/ rural municipality will be made.

#### 2.2.4 Payment Process

- ✓ Farmer group should collect and pay their shared fifty percent amount of the total cost. Project will provide fifty percent amount to the farmer group at the time of mini tiller purchased and copy of bill of the mini tiller will be received.

#### 2.2.5 Transportation

- ✓ Machinery shop should responsible to make available the quoted Mini Tiller in a given deadline.
- ✓ Farmer group should responsible for the transportation. The transportation cost can be paid full by project (if it is less than or 5% of total cost) or cost shared with the farmer group member (if it is more than 5%).

### 3. Procedure for Infrastructure category (Irrigation):

Farmer group should implement their prioritized infrastructure work based on action plan preparation.

#### 3.1 Survey and Cost Estimation

- ✓ SRC-CAP engineer will provide the detail cost estimate after detail survey and it will be approved by agriculture section of municipality/rural municipality.

##### 3.1.1 Contract with Farmer group

- ✓ Based on the estimate, contract (annex-3) will be prepared and signed among the Project, agriculture section of municipality/rural municipality and farmer group and farmer group should bear at least 50% of the total cost in cash or kind.

##### 3.1.2 Payment and materials procurement process

- ✓ After the contract sign, Farmer group will collect local materials like sand, stone, aggregate, wood etc. Once the local materials collected, farmer group will submit the request letter for the first installment payment to the Project. Project will handed first installment payment of seventy percent (70 %) to the farmer group of the project support amount.
- ✓ Farmer groups should purchase materials based on the estimation which are not locally available from any hardware shop without quotation as per The Public Procurement Rules 2064, section 97.
- ✓ After the completion of work, Farmer group should inform to the agriculture section of municipality/rural municipality/Project office. Municipality/rural municipality/Project will measure the work done and prepare the completion report.
- ✓ After the approval of completion report from agriculture section of municipality/rural municipality, farmer group should submit all the bills/receipts, copy of minutes and request letter for the final installment payment to the project. Project will handed reaming final installment payment of thirty percent (30%) to the Farmer group.

*Note: Transportation cost of market materials will be added in cost estimation as per approved district rate and farmer group should responsible for all the action during transportation.*

**Annex 2: Sample for quotation form for Agri-Input Suppliers and Machinery Shops**

**Quotation Form**

Name of Agri-Input Supplier/ Machinery Shop:.....  
 Name of contact person:.....  
 Contact phone number:.....  
 Address:.....

**A. Details of agri-inputs/ equipment**

S.N.	Item	Specification	Unit	Quantity	Unit price	Total cost
<b>Grand Total</b>						

**B. Transportation**

Means of transportation: .....  
 Transportation: From.....to.....  
 One time delivery cost: Nrs.....

.....  
 Signature :  
 Name of the Agri-Input Supplier/ Machinery Shop owner:  
 Date of quotation submission:  
 Stamp:

**Note:**

- An Agri-Input Supplier/ Machinery Shop must be able to send their quote price and items mentioned. Inability of doing so will not be considered for further process.
- An Agri-Input Supplier/ Machinery Shop will have to provide PAN bill once selected and contracted by project with the receipt

### Annex 3: Contract for Action Plan Implementation: Agri-Input

**GoN/JICA  
Sindhuli Road Corridor Commercial Agriculture Promotion Project (SRC-CAP)**

**Contract for Action Plan Implementation: Agri Input**

FY:

Name of Farmer group:

District:

Municipality/Rural Municipality :

Total number of producer member:

**1. Name of item, cost, delivery date:**

Start date:.....

End date:.....

Name of item	Quantity	Total (NRs.)	Farmer group (Nrs)	Project ( Nrs.)	Delivery Date
<b>Grand Total (NRs.)</b>					

(Note: 50 % contribution of farmer group is included in total cost of agri-inputs but in the case of plastic tunnel farmer group Should bear all the other expenses except than Plastic Sheet. Breakdown of estimated budget for plastic tunnel is attached herewith)

**2. Payment method:**

Installment	Amount (NRs.)	Percentage	Date
First			After Agreement sign
Second (except plastic sheet)			After distribution of items
Final			After completion of payment from Farmer group and delivery of plastic sheet
Total			

**3. Transportation:**

Transportation cost can be paid full by project (if it is less than or 5% of total cost) or cost shared with the farmer group member (if it is more than 5%).

**4. Terms and conditions:**

**Agri-Input Supplier:**

- Agreed item should not be different than the specification provided in the quotation and should not be damaged or broken
- The materials should be made available in the given time
- Once the materials are available in the given time, should communicate farmer group in advance
- Should provide receipt to the project and bill to the Farmer group
- Should be responsible until the materials are handed over to the farmer groups



**Farmer group:**

- Farmer group should get a bill when they receive agri-inputs from the agri input supplier.
- The supported item should be used properly
- Except the plastic sheet, farmer group should be responsible to pay the 50% of the total cost directly to the supplier in cash at the time of delivery. If one or two member could not pay their share, group should be responsible for it.

**SRC-CAP:**

- The project will bear no responsibility of risk and/or accident raised during the above mentioned activity.

**We agree the terms and conditions mentioned above:**

From SRC-CAP: Name: Position: Signature: Date:	From Agri-Input Supplier: Name: Signature: Date:
From Farmer group: Name: Address: Position: Signature: Date:	From Municipality/Rural Municipality Office (Agriculture Section Head) Name: Position: Signature: Date:

## Annex 4: Contract for Action Plan Implementation: Infrastructure

GoN/JICA			
Sindhuli Road Corridor Commercial Agriculture Promotion Project (SRC-CAP)			
Contract for Action Plan Implementation: Infrastructure			
FY:			
Name of Farmer group:			
District:		Municipality/Rural Municipality :	
Total number of producer member:			
<b>1. Infrastructure:</b>			
Start date:.....		End date:.....	
Types of Activity	Total (NRs.)	Producers (NRs.)	Project (NRs.)
Grand Total (Nrs.)			
Note: Breakdown of estimated budget approved by agricultural section of municipality/rural municipality is attached herewith.			
<b>Payment method:</b>			
Installment	Amount (NRs.)	Percentage	Date
First		70%	After collection of local materials
Final		30%	After approval of work completion report and other supporting documents.
Total			
<b>4. Terms and conditions:</b>			
<ul style="list-style-type: none"> <li>• Farmer groups will be responsible for repair and maintenance of the infrastructure.</li> <li>• After the completion of the activity, financial clearance should be made from concerned agency.</li> <li>• Farmer group will follow the rules and regulations as per the Nepal Government Law.</li> <li>• Final installment will be paid after the approval of work completion report and other supporting documents.</li> <li>• Farmer group should maintain the record of cash and kinds.</li> <li>• Activity should be completed in a given time period.</li> <li>• The project will bear no responsibility of risk and/or accident raised during the above mentioned activity.</li> </ul>			

We agree the terms and conditions mentioned above:

From SRC-CAP: Name: Position: Signature: Date:	From Farmer group: Name: Address Position: Signature: Date:	From Municipality/Rural Municipality Office (Agriculture Section Head) Name: Position: Signature: Date:
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**Annex 5: Receipt of payment for Agri-Input Supplier/Machinery Shop**

**Receipt of First /Final Installment Payment by Agri-Input Supplier /Machinery Shop**

**Receipt of First Installment Payment by agri-input supplier /machinery shop**

Date:

To: SRC-CAP/JICA

Hariharbhawan, Lalitpur

We received \_\_\_\_\_ NRs for first installment payment based on the contract made with  
.....Farmer Group,.....Municipality/Rural municipality.....District.

.....  
Mr./Ms.:

Agri-Input Supplier /Machinery Shop:

Stamp

**Receipt of Final Installment Payment by agri-input supplier /machinery shop**

Date:

To: SRC-CAP/JICA

Hariharbhawan, Lalitpur

We received \_\_\_\_\_ NRs for final installment payment based on the contract made with  
.....Farmer group,.....Municipality/Rural municipality.....District

.....  
Mr./Ms.:

Agri-Input Supplier /Machinery Shop:

Stamp



**Annex 6: Payment request letter for Agri-Input Supplier /Machinery Shop**

**Payment request letter by Agri-Input Supplier /Machinery Shop**

Date:

SRC-CAP/JICA  
Hariharbhawan, Lalitpur

**Subject: Request for First Installment payment**

Dear madam/sir

As per contract made among in date.....I would like to request for the first installment payment of amount Nrs.....

Thank you

.....  
Mr./Ms.:  
Agri-Input Supplier /Machinery Shop:  
Stamp

**Payment request letter by Agri-Input Supplier /Machinery Shop**

Date:

SRC-CAP/JICA  
Hariharbhawan, Lalitpur

**Subject: Request for Final Installment payment**

Dear madam/sir

I received first installment on.....date. I have distributed all the items as agreed in the contract made on..... I would like to request for the final installment payment of amount Nrs.....

Thank you

.....  
Mr./Ms.:  
Agri-Input Supplier /Machinery Shop:  
Stamp

Note:

With this request letter, please enclose the following documents as well:

- ✓ a receipt voucher of each producer group member,
- ✓ a meeting minute of the farmer group where groups mention receipt of all items and request for full payment to the argi- input supplier (name mentioned)
- ✓ Bill of the all items

**Annex 7: Delivery notice made by Agri-input supplier/Machinery shop**

**Delivery notice made by Agri-Input Supplier /Machinery Shop**

I have received the following items and quantity.

S.N.	Name of items	Quantity	Remarks

Receive by:

Name:

Position:

Address:

Date:

Distributed by:

Agri-Input Supplier /Machinery Shop:

Date:

Stamp:

**Annex 8: Receipt of first/final payment by Farmer group**

**Receipt of First/Final Installment payment by Farmer group**

**Receipt of First Installment payment by Farmer group**

Date:  
To: SRC-CAP/JICA  
Hariharbhawan, Lalitpur

We received \_\_\_\_\_ NRs for first installment payment based on the contract.

.....  
Name:  
Position:  
Name of Farmer Group:  
Address:

**Receipt of Final Installment payment by Farmer group**

Date:  
To: SRC-CAP/JICA  
Hariharbhawan, Lalitpur

We received \_\_\_\_\_ NRs for final installment payment based on the contract.

.....  
Name:  
Position:  
Name of Farmer Group:  
Address:

**Annex 9: Payment request letter for Farmer Group**

**Payment request letter by farmer group**

Date:

SRC-CAP/JICA  
Hariharbhawan, Lalitpur

**Subject: Request for First Installment payment**

Dear madam/sir

As per contract made among in date.....We would like to request for the first installment payment of amount Nrs.....

Thank you  
.....

Name:  
Position:  
Name of Farmer Group:  
Address

**Payment request letter by farmer group**

Date:

SRC-CAP/JICA  
Hariharbhawan, Lalitpur

**Subject: Request for Final Installment payment**

Dear madam/sir

We have completed the construction of.....We would like to request for the last installment payment. We have attached completion report along with other supporting documents here with.

Thank you  
.....

Name:  
Position:  
Name of Farmer Group:  
Address

Note:  
With this request letter, please enclose the following documents as well:

- ✓ Completion report
- ✓ Bill of the all items purchased
- ✓ Meeting minute mentioning the completion of the activity and sharing of the agreed amount of cash and kind work in given time and mentioning payment of the final installment



