

# **Swarnjayanti Gram Swarozgar Yojana**

**Report of Survey Conducted on  
Developing strategies to increase production and  
to enhance market linkage of horticulture**



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There is a significant growth potential for production and marketing of horticulture commodities in underdeveloped and emerging economic countries of the world. In this context though India has crossed many milestones of success after independence (specially through Green Revolution), but it has only 2% share in the worlds horticulture production. The situation demands that we produce more & more from lesser piece of land.

In 60's, agricultural technologies were spread specially in Bihar under IADP (Integrated Agricultural Development Program) and IADP (Intensive Agriculture Development Program) in selected districts where potentialities were available . In this context Munger district was covering a large of the state in which there were cluster of lands like Diara , Tal , Hills and Plain. If we visualize the overall development and production it is felt that agriculture and allied departments do not have a regular linkage for proper management of these clusters and they are working in isolation of each other. The agriculture development in the district suffers several physical, institutional, infrastructural and technological constraints. The district is one of the victims of flood and drought like natural calamities. Among other constraints non availability of quality seeds, poor support of credit facilities, erratic supply of electricity, small size of land holdings and inadequate marketing facilities are the reasons due to which cultivators do not get the optimum price of their produce.

Development of horticultural crops production will not only provide the ability to meet domestic food needs but also form household economic and social advancement of human health. In this regard women can make a significant contribution in specialized trades like horticulture gardens and in post harvest operation, provided for the latest skill imparted to them.

Successful investment in programs aimed to enhance horticulture must be based upon a strategic assessment of the major constraints faced by farmers , agro-ecological situation and must include a regional analysis of market opportunities. Through sustainable interventions knowledge, capital and technical inputs, for the development of horticulture can be made. Project based approach guided by strategic program would led to economic development and contribute to food security.

### **Background Information of the District:**

Munger district is situated in the southern part of Bihar comprising a total geographical area of 1,24,816.5 hectares. It lies between 24.22' to 22.30' latitude and 85.30' to 87.30' longitude. The total population of the district is 11,37,797 of which rural population is 8,19,950 and urban is 3,17,847 according to 2001 census. The district comprises 13.27% of SC population and 1.59% of ST population.

are three district season viz. summer, monsoon & winter

**Summer: (March to May)**

There is a gradual rise in temperature during summer season. The maximum temperature rises upto 45 C.

**Monsoon: (June to September)**

Monsoon starts from middle of June and continues up to end of September.

**Winter: (October to February)**

There is a gradual decrease in temperature, which varies from 3.5C to 9C.

**Rainfall:**

The average annual rainfall of this district is 1146.4mm of which 80% is received during monsoon season and rest during summer.

**Soil:**

Major soil type of Munger district is grey to dark grey in colour. The soil has good fertility status. It becomes bonding during summer and remains inundated during rains. The soil type of Hilly region is sandy loam clay (Reddish yellow) while that of the Gangatic plain is sandy clay. The Diara lands comprises of alluvial soil. Diara lands are either:

1. Islands between river streams or
2. The place of abandoned Ddhar of flood plains.

**Agro-ecological situation:**

On the basis of Topography, soil resources & water table of Munger district has been divided into clusters or four situation .These are:

1. Diara - Lands of Ganges –10% (area)
2. Tal - Lands south of Ganges – (5.3%)
3. Plain - Old alluvial plain in south of Ganges-(81.3%)
4. Hilly - Shallow alluvium-(3%)

**Principal Horticultural crops Grown in Mungers District:**

<b>Name of crop</b>	<b>Kharif</b>	<b>Rabi</b>	<b>Summer</b>
<b>Vegetables</b>	Lady's finger Brinjal Pumpkin Bodi Bitter gourd	Potato Tomato Cauliflower Cabbage Pea	Pointed gourd Pumpkin Lady's finger Sponge gourd
<b>Spices</b>	Chilly Turmeric Ginger	Chilly Garlic	
<b>Fruits</b>			Mango

### **Methodology of study:**

In order to get the base line information regarding the participation , perception and attitude of women for horticulture , various methodology has been carried out. The methodology involved:

- Identification of the target group
- Segmenting the target group
- Developing communication
- Analysing feedback

Data collection is of both the types i.e qualitative and quantitative. For this study the sources of data collection is-

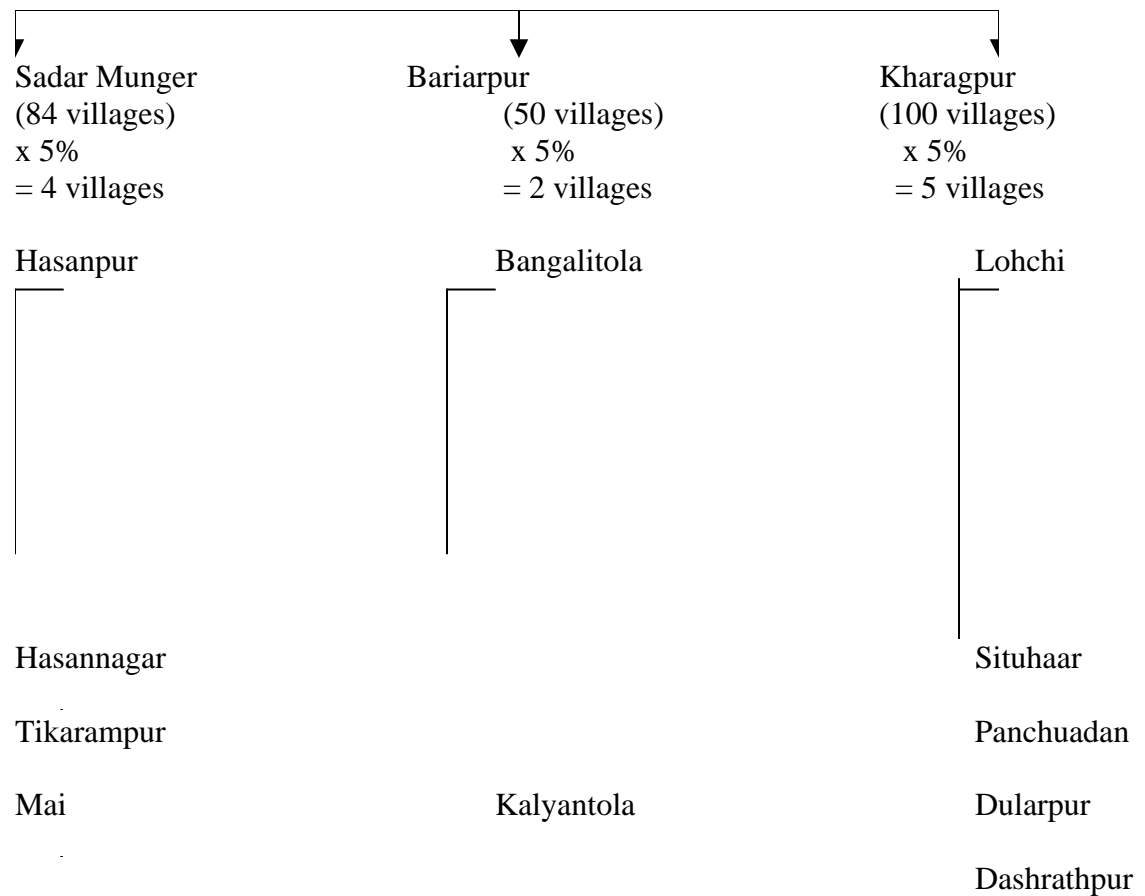
**1. Primary Sources :** under this source the methods of data collection were :

- a) **FGD :** In order to get bulk information regarding the cropping pattern , sources of irrigation , various problems faced during cultivation etc, FGD is carried out in all the selected sample villages.
- b) **Direct personal interview:** On the basis of sample population direct personal interview is carried out and the tool used for it was interview schedule. Through this method an overview of potential areas and production level of existing horticultural crops has been identified in the selected villages.
- c) **PRA:** Through PRA exercises various constraints like degradation of soil fertility, seasonality of vegetable production is identified. The tools for this exercise were-
  - Seasonality
  - Trend Analysis.

**2. Secondary sources:** Apart from primary sources the data collection also involved secondary sources. Information regarding village population , organization profile, district profile etc. has been collected through-

**Sample size :** Since the activity will be new for SEVA so in order to get the potential villages convenient sampling has been carried out. The district comprises of 8 blocks of which SEWA is working over 3 districts namely Sadar Munger, Barriarpur and Kharagpur covering 10, 8 & 20 villages respectively. Sample villages for conducting the survey includes both intervention (of SEWA) as well as non intervention villages. The sample selected is as given :-

**Munger (629 villages)**



## Employment Generation through Horticulture:

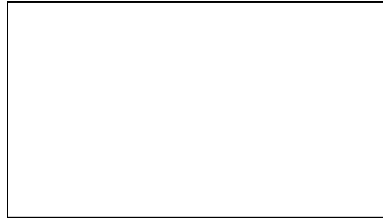
Horticulture is a broad concept. Thus it generates a wide range of employment to various categories of unemployed women and also ensures sustainable development to them. The distinct areas where women with distinct background can be employed are as follows-



- Cultivation Practice
- Management of crops
- Harvesting

### Production

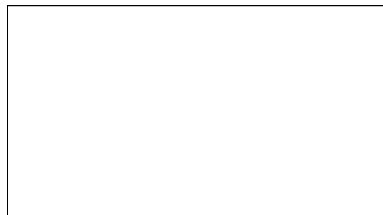
Women who are engaged in cultivation practices ( Batai land cultivators/ Wage labourers/ Marginal to small Land holders



- Shorting / Grading
- Processing
- Packaging

### Post Harvest Management

Landless but literate women



### Marketing

**Scope of Various Horticulture Crops and its Marketing:**

The soil type and Agro-ecological situation of Munger district ensures the potential for a wide range of Horticultural crops which has a great demand in the local market. The market chain of the existing horticulture crops in Munger district is as follows-

Middlemen Local / Outside

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10% commission to Whole Sellers on vegetables  
20% commission on fruits

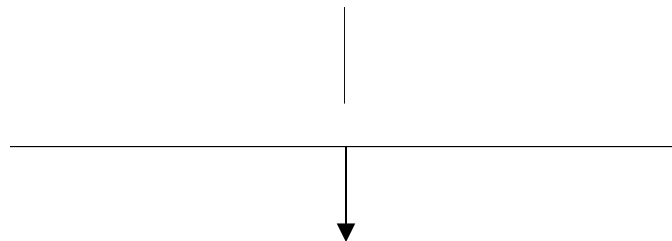
Local whole seller

10% commission to Whole Sellers on vegetables  
20% commission on fruits



Hawkers

Vendors



In this chain about 75% of the total vegetables are being supplied from the other states while in the case of fruits except Mango all the fruits are supplied from outside for the whole year. Some of the products do have potential in the district itself but they are being supplied from outside. Some of which are -

On season Vegetables	Garlic,Ginger,Beet root,Capicum, Lemon
Off season Vegetables	Cauliflower, Tomato,Cucumber
Fruits	Banana,Guava
Flowers	Marigold, Rose, Ragnigandha,Gladius

The list of various horticulture crops and their respective market are as given –

I Seasonal vegetables	- Local whole sellers (gaddi) - Local paikars
II Off season vegetables	- Whole sellers - Paikars
III Fruits - Banana - Papaya - Guava	- Local whole sellers
IV Exotics - Mushroom - Baby corn - Broccoli	- 3/5 star hotels in Patna, Kolkata - Targeting executive class - ITC - Jamalpur Factory - Railways - Open market in Kolkata, Delhi ( Azadpur Mandi )
V Aromatics - Lemon Grass - Mint	- Vijay Herbs and Natural Essential Oils, Herda (M.P) - Hindustan Mint, Chandausi ( UP) - Shree Anand, Patna (UP)

5	
- Khas	
VI Flowers	
- Marigold	- Local Flowers Shop
- Rose	- Religious Places
- Rajnigandha	e.g Demand of Rajnigandha in Muzars
- Gladious	every Thrusday & Friday
- Rud	Demand of flowers in chandisthan
VII Spices	
- Garlic	- Local whole sellers
- Ginger	- During Chhat puja katcha haldi are in great
- Termeric	demand. Thus cultivation during
	monsoon can fetch good income during
	occasion
VIII Dry land Horticulture	
- Amla	Local whole sellers
- Papaya	
- Citrus verities	
- Pomegranate	
IX Fodder	
- Cowpea	- Milk co-operatives
- Barseem	- Cattle owners
- Oat	
- Bajra	
- Sudan	
- Paragrass	

### **Problem Areas Under Horticulture:**

#### **Soil:**

- Degradation of soil fertility.
- Soil erosion in Diara and hills
- Lack of organic materials
- Lack of water holding capacity of soil in plains.
- Sand deposition in Diara land.
- Water logging in Kharif in Diara and Tal areas.
- No Government action for testing chemicals in soil.

#### **Water:**

- Water logging in Diara and Tal areas
- High probability of flood in Diara and Tal.
- Underutilization of ground water due to siltation.

#### **Horticulture:**

- Lack of balanced use of fertilizers.
- Lack of timely irrigation.
- Lack of proper market linkage.
- Lack of use of post harvest technology.
- Lack of Community based organization for fruits \ vegetables.

### **SWOT Analysis:**

After collection and compilation of data through FGD's and interview schedule, various problems and opportunities unsolved. On the basis of such issues SWOT analysis is carried on & result is as given.

#### **Strengths:**

- a) Rich fertile soil except some of the hilly areas of Kharagpur.
- b) Easy availability of ground water and surface water.
- c) Soil suitable for cultivation of medicinal plants as well as exotics.
- d) Availability of forest for sustainable farming of medicinal plants.
- e) High production of Tomato and cauliflower in plain.

#### **Weaknesses:**

##### **Soil:**

- a) Soil erosion in Diara as well as in hill.
- b) Excessive application of chemical fertilizers.
- c) Low application of organic manner.
- d) Monocropping.

##### **Water:**

- a) Falling trend of ground water.
- b) Existing irrigation scheme in defunct.
- c) No cropping in Kharif season due to heavy and continuous water logging in Diara and Tal.
- d) Frequent shifting of river course.

##### **Forest:**

- a) Deforestation.

##### **Horticulture:**

- a) Lack of government nurseries.
- b) Non availability of improved varieties of seed.
- c) Lack of market linkage during peak season.

- Land holdings are dominating property of male members.
- g) Majority of the population are engaged in Batai land cultivation.

**Opportunities:**

- a) Vegetable production and its preservation.
- b) Fruits production and its preservation.  
Citrus fruits, Guava, Papaya, Banana, Pomegranate can be promoted in plain.
- c) Floriculture can be promoted in plain as well as in hilly areas witch also promotes a new activity to carry called Bee keeping.
- d) Medicinal & Aromatics are suitable for the soil type in plain as well as in hill.

**Threats:**

- a) Absence of assured market.
- b) Defunct electricity.
- c) Downfall trend of ground water.
- d) Soil erosion.
- e) Deforestation.
- f) River bank is cutting due to frequent changing of river Gangas course.
- g) Dominating power of male members over the lands.

**Strategies for Production and Marketing:**

On the basis of SWOT analysis a feasible strategy is developed for carrying on the various activities related with horticulture. Along with the strategies to increase the production, the activities also include extension strategies to optimize the production as well as the profit of farmers with minimum risk.

Besides extension activities for value addition, various market agencies have also been identified so as to strengthen the productivity. The worked out strategies are as given –

<b>Marketing</b>	
I. On-season vegetables	<ul style="list-style-type: none"> <li>a) Organizing groups which are not able to produce more due to some constraints (eg. Irrigation).</li> <li>b) Integrating them for an integrated benefit eg. Assured irrigation through well / pump set / boring etc.(NHM).</li> </ul>

<p>II. Off-season vegetables</p> <ul style="list-style-type: none"> <li>-Cauliflower</li> <li>-Tomato</li> <li>-Cucumber</li> <li>-Spinach</li> </ul>	<ul style="list-style-type: none"> <li>a) Organizing interested groups especially of those who are already engaged in production &amp; marketing.</li> <li>b) Exposure visit / Audio visual aid.</li> <li>c) Training and field demonstration.</li> <li>d) Arranging poly houses (NHM).</li> <li>e) On farm monitoring.</li> </ul>
<p>III. Fruits</p> <ul style="list-style-type: none"> <li>-Banana</li> <li>-Papaya</li> <li>-Guava</li> </ul>	<ul style="list-style-type: none"> <li>a) Organizing interested group along with those who have barren badi and those who are engaged in production and marketing of vegetables</li> <li>b) Arranging planting materials (NHM)</li> <li>c) On farm monitoring.</li> </ul>
<p>IV. Nutritional garden for self consumption</p>	<ul style="list-style-type: none"> <li>a) Organizing groups of those who have barren badi.</li> <li>b) Training .</li> <li>c) Monitoring.</li> </ul>

**Extension Activities:**

<p>V. Exotics</p> <ul style="list-style-type: none"> <li>-Mushroom</li> <li>-Baby corn</li> <li>-Broccoli [except activity (d)]</li> </ul>	<ul style="list-style-type: none"> <li>a) Organizing interested groups.</li> <li>b) Exposure visit / AV aid.</li> <li>c) Training.</li> <li>d) Provision of dehydration plant.</li> <li>e) Monitoring.</li> </ul>
<p>VI Aromatics</p> <ul style="list-style-type: none"> <li>-Lemon grass</li> <li>-Mentha</li> <li>-Khas</li> <li>-Pamaroja</li> <li>-CN-5</li> </ul>	<ul style="list-style-type: none"> <li>a) Organizing groups of those which have assured irrigation.</li> <li>b) Exposure visit / AV aid.</li> <li>c) Training</li> <li>d) Arranging planting materials</li> <li>e) Provision of Distillation Plant (NHM).</li> <li>f) On farm monitoring.</li> </ul>
<p>VII Commercial Floriculture</p> <ul style="list-style-type: none"> <li>-Marigold</li> <li>-Gladious</li> <li>-Rajanigandha</li> <li>-Rose</li> <li>-Rud</li> </ul>	<ul style="list-style-type: none"> <li>a) Organizing interested groups</li> <li>b) Exposure visit / AV aid</li> <li>c) Training and field demonstration</li> <li>d) On farm monitoring</li> </ul>
<p>VIII Spice cultivation</p> <ul style="list-style-type: none"> <li>-Garlic</li> <li>-Ginger</li> <li>-Termeric</li> </ul>	<ul style="list-style-type: none"> <li>a) Organizing interested groups from those villages where orchards are available.</li> <li>b) Arranging orchard land on lease.</li> <li>c) Training for cultivation over the</li> </ul>

IX Dry land horticulture <u>-Papaya</u> <u>-Citrus verities</u> <u>-Amla</u> <u>-Pomegranate</u>	Monitoring. a) <b><u>Organizing interested groups from those villages where irrigation problem is intensive (Under utilization of ground water due to siltation).</u></b> b) <b><u>Training and exposure visit</u></b> c) <b><u>Arranging planting materials.</u></b> d) <b><u>Monitoring.</u></b>
<b><u>X Fodder cultivation</u></b> <u>-Cowpea</u> <u>-Oat</u> <u>-Barseem</u> <u>-Paragrass</u> <u>-Sudan</u> <u>-Bajara.</u>	a) <b><u>Organizing interested groups.</u></b> b) <b><u>Training and exposure visit.</u></b> c) <b><u>Arranging planting materials / seeds.</u></b> d) <b><u>Monitoring</u></b>

### **Strategies for different Land holdings:**

During survey it has been found that majority of the landless people are engaged in Batai land cultivation . Thus strategies for certain activities should be carried on, taking this fact into concern . The various activities according to the land holdings are as given-

<u>Types of land holdings</u>	<u>Proposed Activities</u>
a) Own Land	- Dry land Horticulture, Aromatics, Exotics, Floriculture , Fodder.
b) Batai land	- Off-season vegetables ,On-season vegetables , Fruits
c) Lease land	- Floriculture , Spice , Aromatics, Fodder.

### **Strategies for Market:**

Proposed Activities:

- station testing and trails of verities.
- c) Provision of collection centers and transportation.
  - d) Contacting at least three agencies for assured market so as to get rid of risk in future.
  - e) Advertising the verities of product and location of collection centers through local news papers and posters.
  - f) Getting an overview of the market demand and producing accordingly.

### **Phase wise strategies for production:**

Working with women in a rigid social structure, where male members have their dominating power over the properties is a tedious task. Thus it is very necessary to get into the pros and cons of activities to be followed.

Farmers seek optimum return of their produce. Thus in this context categorizing the activities into different phases would minimize the risk. The division of activities are

#### **Phase I ( Trust building ):**

In this phase the activities should ensure easy and early benefits in such a way that further activities which will completely be new could be paced up. Thus in this phase proposed activities are

- scaling up the production of on-season vegetables through the removal of the constraints ( irrigation etc.)
- off-season vegetables
- few fruit trees

#### **Phase II:**

According to the profit measures in the above activities production can be scaled up with giving emphasis on such crops which fetches good income. Practicing other crops like exotics , aromatics on a trial basis ( in few kathas of land ).**Floriculture can also be promoted according to the local demand.**

#### **Phase III:**

On the basis of above trails the production of new crops can be increased provided that the market is ready to give optimum benefits to the farmers.

### **Potential areas under Horticulture :**

The potential areas under Horticulture as well as their respective constraints in the villages of three blocks namely Sadar Munger, Bariarpur & Kharagpur is identified. The major constraints are related with soil degradation as well as irrigation. The provision for such issues has been considered under National Horticulture Mission. The production can be increased to a large extent if irrigation like problem successfully solved through this scheme of Government (NHM). The expected activities as per the resources in the



**Block Village Total Pop. No. of HH Pop.**

**(F) Marginal workers Resource Available Critical Issues Expected Activities Sadar**

Munger Hasanpur 707 133 342 12 \* Fertile Soil

\* High water table

\* Irrigation through boring, pump sets. \* Lack of preservation of surplus produce of vegetables.

\* Lack of awareness regarding organic manure.

\* Lack of community based organization for fruits / vegetables.

\* Few irrigation problem. \* Off season vegetables

\* few fruit tree

\* Banana

\* Guava

\* Papaya

\* Diversifying the on season vegetables.

\* Capsicum

\* Sugarbeat

\* Exotic

\* Mushroom

\* Baby corn

\* Broccoli

Hasannagar

Tikarampur 281

- 57

- 153

- 128

-

” \* Water logging during monsoon

\* Lack of community based organization.

\* Lack of awareness regarding organic manure.

”

Katariya

Mai 2471

3299 450

565 1166

61 \* Soil in not much fertile

\* Mango orchards \* Lack of irrigation

\* Low water table \* Dry land horticulture

\* Spice cultivation Kalyantola \* Fertile Soil

\* Irrigation through pump set \* Most of the women are engaged in Batai Land cultivation.

\* Lack of irrigation

\* Water logging during monsoon

\* Lack of use of HIV

\* Off season vegetables

\* Few fruits trees

\* Aromatics

\* Mentha

\* Khas

\* Exotic

\* Broccoli Kalyanpur

Phulkhia

Asha tola

Kumarpur -

394

1017 -

75

171 -

172

502 -

1

6 \* Fertile Soil

\* Low water table

\* Irrigation – Rain water \* Lack of irrigation

\* Batai land cultivation

\* Land holdings are located at Diara

\* Dry land Horticulture Kharagpur Panchvadan

Dularpur 206

- 40

- 85

- 35

302 \* Fertile soil (Sandy loam day)

\* Medium water table

\* Irrigation – Boring (Pvt)

\* Batai land cultivation

\* Irrigation problem

- \* Lack of improved variety of seeds.
- \* Off season vegetables
- \* Aromatics
- \* Few fruit trees Dashrathpur 1393 303 648 - \* Fertile soil
- \* Medium water table
- \* Irrigation well \* Lack of awareness regarding organic manure
- \* Nutritional garden Lohchi 2376 402 1081 29 \* Fertile soil
- \* Medium water table
- \* Irrigation – pump set \* Few irrigation problem
- \* Lack of community based organization \* Floriculture
- \* Off season vegetables
- \* Few fruits trees Situraar - - - \* Fertile soil \* women members are relevant to form group \* Off season vegetables
- \* Aromatics

## **Suggestion and Recommendation:**

- A regular contact should be maintained with the male members of the family as the activity is not possible to carry without landholdings which is considered to be the property of male members in the social structure.
- The areas where production and marketing is going on at a large scale ( Situhaar, Hasanpur), can be promoted for certain new crops like Capsicums, Beetroot etc. This will fetch good income during the period when 'grow and destroy' situation occurs.
- Mango orchard in Mai and Hasanpur villages can be promoted for spice cultivation.
- For production practices on leased out land it is better to promote Floriculture / Aromatics / Medicinal because conflict may arise on consumable crops
- Production can be started as per the demand of hour. Like during Chhath puja Katchha Haldi and Banana are in high demand, thus cultivation of such crops before the occasion could fetch good income. Similarly flowers are in high demand during marriage and during Dipawali.
- A regular contact should be maintained with the local leaders for the facilitation of such activities.
- A regular linkage should be maintained with the Government agencies like KVK, ATMA, NABARD etc for the facilitation of programme to be taken up.
- Participation level of organization , during camps, Krishi melas etc, being organized by such Government agencies , should be high.
- If the production will be demand driven the activity could ensure good income like during Shrawani mela there is a high demand of fruits and vegetables in Sultanganj. Thus fruits like banana and vegetables like Cucumber, Tomato, Beetroot can be marketed there on a large scale. Similarly there is a high demand of flowers during marriages and during Depawali like festivals
- Under Aromatics, Pamaroja and CN-5 gives a complete Herbal oil with rose smell which can be utilized for scenting of Agarbatti being produced by members of organization. Thus it can be produced as per requirement for scenting. The residue so formed after distillation can be used as Burada in Agarbatti production.

For getting land on lease following SEWA members can be approached

<u>Name</u>	<u>Group</u>	<u>Village</u>	<u>Block</u>
Gauri ben	-	Bangalitola	Bariarpur
Geeta ben	-	”	”
Sabeeta ben	Sant	Santtola	Kharagpur

### **Conclusion:**

Women with assets are able to fight poverty and exploitation better than men. It ensures social security system and empowerment of women. But they need a regular flow of such assets, which could be made possible if successful training will be imparted to them for capacity building according to their capability for certain activities. In this regard they can make a significant contribution in specialized trades like fruit and vegetable cultivation and other horticulture gardens and in post harvest operation followed by marketing. This will also provide nutrition for the proper development of their children as well as for their own health. Thus the activities must be molded into a movement in the village. This will definitely serve as an engine for agricultural and economic diversification