MBM – CARI-VI

Floriculture
(Crossandra, Marigold and Tuberose)

Rationale

Floriculture industry a lucrative business comprising traditional flowers , cut flowers, pot plants, dry floral crafts and planting materials, besides value-added products like bouquets, garlands, floral baskets, floral concretes, pot-pourii and oils. It has proved to be a highly profitable agro-business generating maximum returns per unit area. Flowers like Marigold, Crossandra, Jasmine, Tuberose yields profusely in these islands and can be profitably cultivated. Crossandra and marigold fetch very high prices in the local market and many farmers grow these in small areas in their homestead gardens. The package of practices for commercial cultivation of these crops has been standardized and technology has been transferred. This can be a good alternative and economic crop for the small stakeholders. The per unit returns from marigold, crossandra and tuberose was found to be very high in these islands.

Crossandra

Technical details of the technology

Crossandra is an important flower crop most widely grown in islands. It is commonly used for hair adornment, garlands. It is very popular because of its colour, light weight and keeping quality. The productivity of this flower crop is higher than any other flower crop. It can be grown in almost all types of soil and is adaptive to wide range of climatic conditions. It can be propagated through seeds or stem cuttings with a spacing of 50x50 cm. Fresh seeds should be used for raising the seedlings. Seedlings having 4 to 6 leaves are ready for transplanting in the field. For better growth NPK @ 50:100:60 should be added 50-60 days after planting at an interval of six months. For increased growth and flowering, NPK along with FYM and $ZnSO_4$ is recommended. Planting is done in June- July and Oct- Nov. Harvesting is done alternate days in the early morning hours. For 1 ha of crop of Crossandra about 22.5 g of seeds is required.

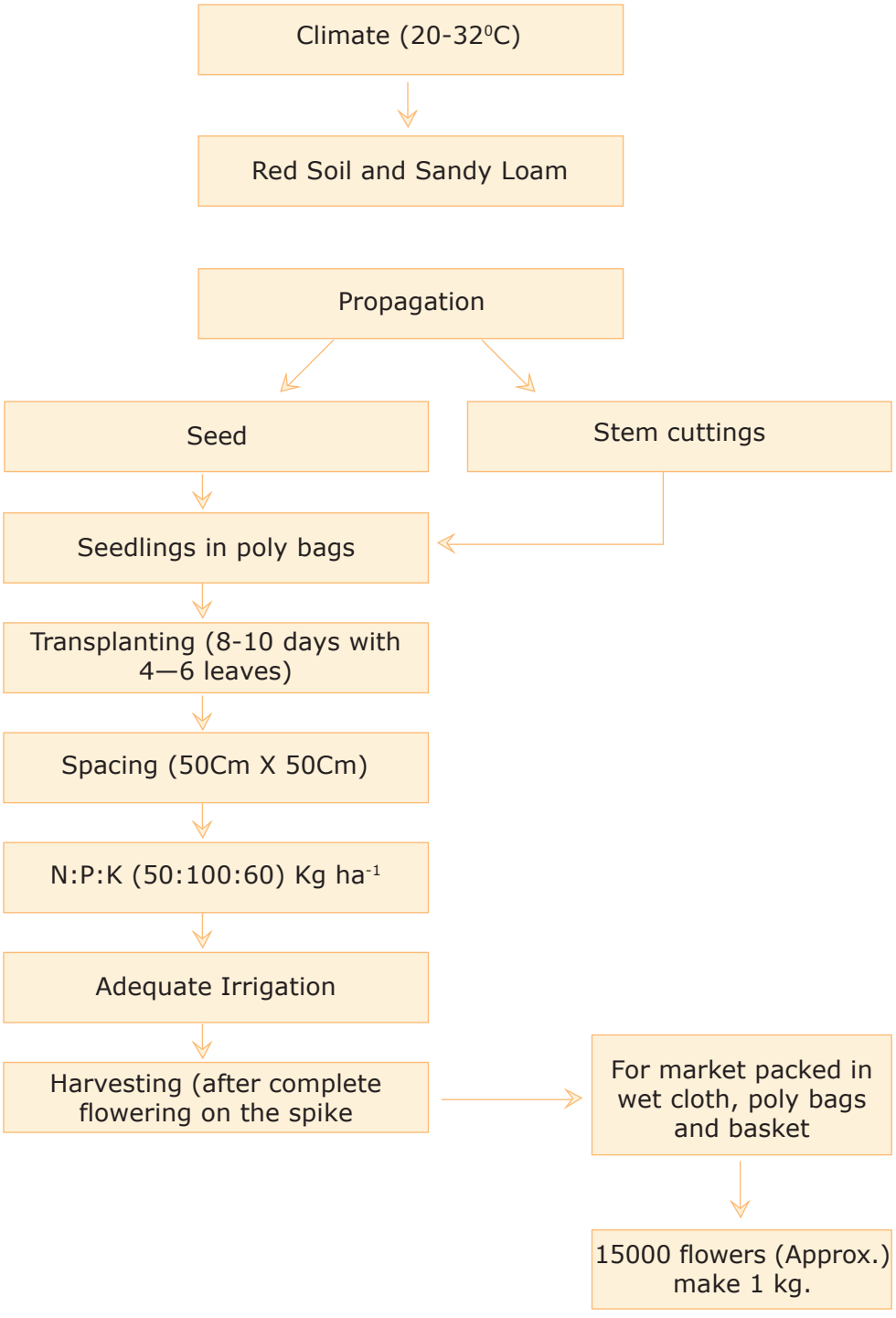
Input required

Good quality seedlings, nursery to raise seedlings, manpower, manures and fertilizers.

Source of availability

Elite seedlings can be procured from, CARI, Port Blair, IIHR, Bangalore and IARI, New Delhi., Manures and fertilizers from local market.

Activity flow chart- Crossandra



Time schedule

Seedlings raised	Transplanting time	Flowering season	Harvesting time
April – May Aug.- Sept.	June-July Oct.- Nov.	40-60 days after planting	Alternate days after complete opening of flower

Cash in flow and Out flow

Crop	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross Return (Rs./ha)	Net Return (Rs./ha)	BC Ratio
HYV (Aboli)	29.5	1,24,500	8,87,500	7,63,000	7.1:1
Selling price of crossandra – Rs. 300/- kg.					

Inputs

Crop	Spacing	Req. plant material/acre	Rate (Rs.)	Total cost of plant material
Crossandra	50cmx50cm	16000 nos	Rs.2/-	Rs.32,000/-

Manures and Fertilizers

Highly fertile soil is essential for good yield. In condition to the basal application of FYM @25 tonnes/ha, periodical top dressing with fertilizers and organic manure is essential. The first application of fertilizers should be done in 50-60 days after planting, at the rate of 50 Kg of Urea, 100 kg of SSP and 60 kg of M.O.P/ha twice at interval of 6 months. The application of fertilizers is to be necessarily followed by irrigation. Weeding, application of manure/ fertilizer and earthing up are combined for easy maintenance and labour saving.

Irrigation

Adequate irrigation helps in rapid growth of the plant and also to obtain regular flower yield. At the time of planting the seedlings, the soil should have optimum moisture for initial growth, if there is no moisture at the time of planting then irrigation should be given immediately after transplanting the seedling in the field. During

dry period irrigation at shorter intervals and also during the flowering stages, result in more flower and also encourage better plant development.

Marigold

Marigold gained popularity amongst farmer and flower dealers on account of its easy culture, wide adaptability, attractive colour, shape, size and good keeping quality. Marigold is valued as loose flower for making garlands. Besides, it is used as trap crop in the borders to attract insects attacking the main crop. Three weeks old seedlings are planted which grows upto a height of 75-90 cm at maturity with deep orange or lemon yellow flowers. It is propagated through seeds and cuttings. For better growth and improvement, application of NPK @80:40:80kg/ha is recommended. Flowers are plucked when they have attained the full size and it should be done in cool hours of the day either in the evening or morning. Field should be irrigated before plucking, so that flowers keep well for long period after harvest. Farmers have opted the technology for growing marigold in large scale. Fifteen varieties were evaluated of which Co-1 marigold (30 kg/sqm) performed best followed by Namdhari marigold, First Lady and Pusa Narangi. Pinching of terminal leaves was found to significantly increase growth and yield in Pusa Basanti and Pusa Narangi gaindha. Pusa Narangi is mostly preferred due to higher flower production.

Input required

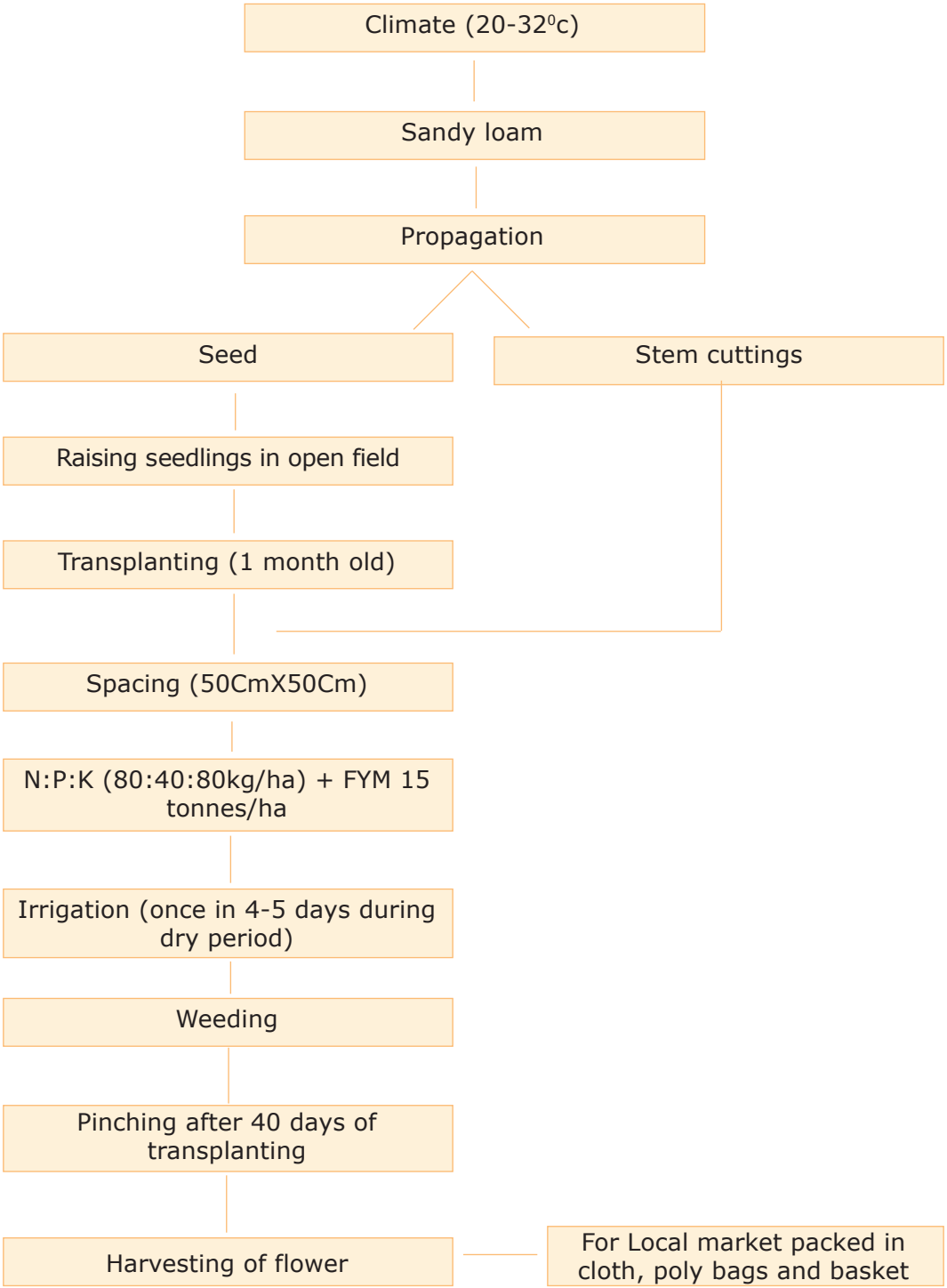
Good quality seedlings, nursery to raise seedlings, manures and fertilizers, manpower, water supply for proper irrigation.

Source of availability

Elite seedlings can be procured from, CARI, Port Blair, IIHR, Bangalore and IARI, New Delhi. Manures and fertilizers – From local market.

Sowing time	Transplanting time	Flowering season	Harvesting time
Mid June Mid Sept. Jan- Feb.	Mid July Mid October Feb.- March	Late rain Winter Summer	Picked once in 3 days; 60 days after planting

Activity Flow Chart - Marigold



Cash in flow and out flow

Crop	Yield (q/ha)	Cost of Cultivation (Rs./ha)	Gross Return (Rs./ha)	Net Return (Rs./ha)	BC Ratio
Local	54.5	64,540	1,63,500	98,960	2.5:1
HYV (Pusa Narangi)	62.4	70,700	1,87,200	1,16,500	2.6:1

Selling price of Marigold – Rs. 30/-/ kg.

Crop	Spacing	Req. plant material/acre	Rate (Rs.)	Total cost of the plant material (Rs.)
Marigold	50cmx50cm	16000nos	20/- per 100 seedlings	3200/-

Tuberose

Tuberose occupies a prime position because of its importance as cut flower, loose flower as well in perfume industry. It is profitably cultivated because of less pest attack and little input. Tuberose is grown in wide range of soils and is propagated vegetatively through bulbs; it begins to flower in 80-95 days after sprouting. Selection of good quality plant materials is necessary for obtaining high yield and good quality flowers. Best size of the bulb to be preferred is 2.5 to 3 cm. Evaluation of tuberose variety has shown that Double (Kolkata) performed well (30 spikes/sq m) followed by Shrinagar (Single). The optimum planting time was found to be Nov. to Dec., with maximum spike production of 29/ sqm.Tender nut water at 25% conc. doubled the vase life of tuberose blooms over control. Planting of bulbs at greater depth delays appearance of shoots but encourages better flower spike production. FYM @ 20 tonnes/ ha and split doses of NPK @200:80:150 kg/ha is recommended.

Input required

Disease free bulbs, manures and fertilizers, manpower, adequate water supply for proper irrigation.

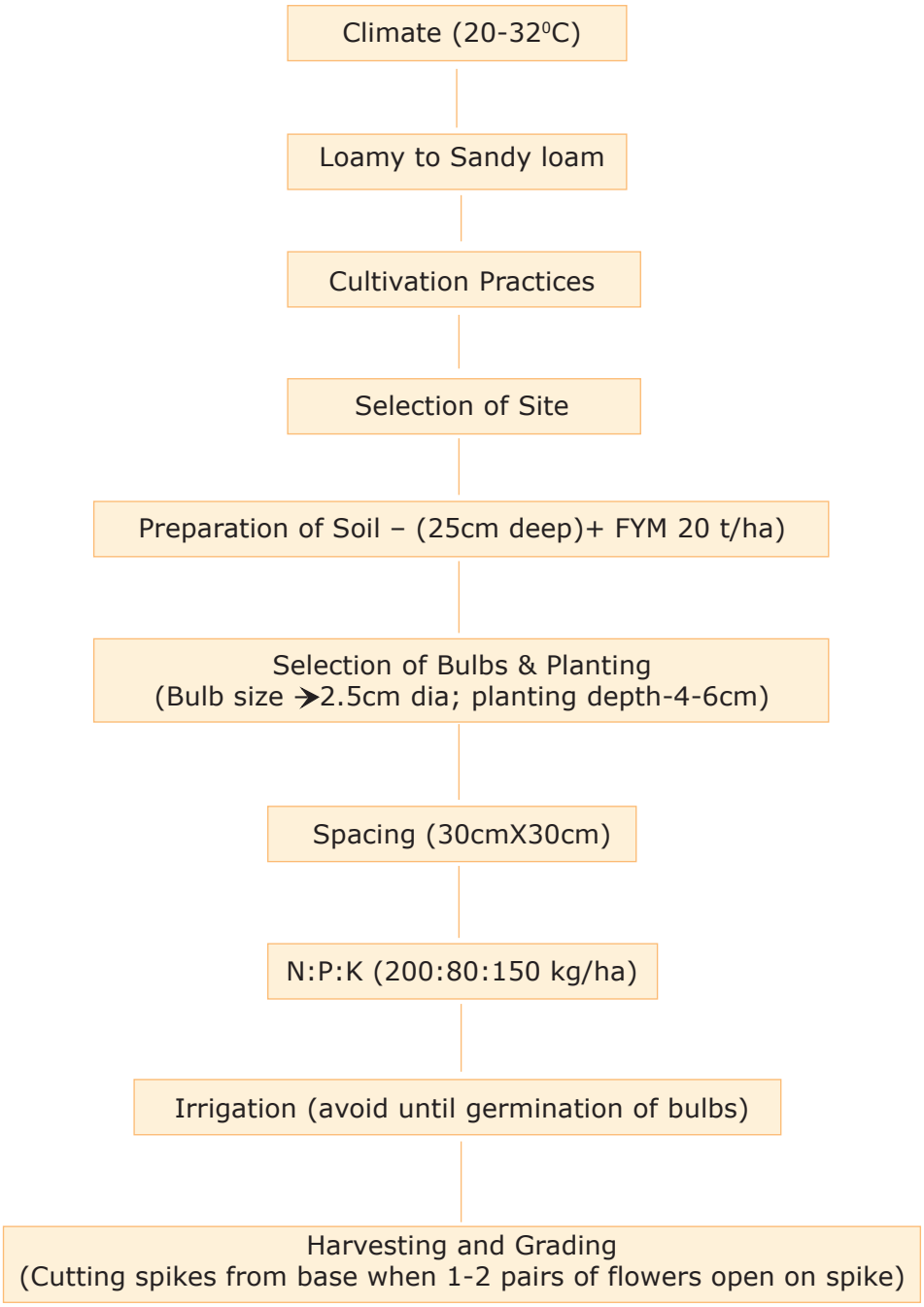
Source of availability

Elite bulbs can be procured from, CARI, Port Blair, IIHR, Bangalore and IARI, New Delhi. Manures and fertilizers – From local market.

Time schedule

Planting time	Flowering season
(Nov. to Dec)	80-95 days after sprouting. Flowers throughout the year

Activity flow chart - Tuberose



Cash in flow and out flow

Crop	Yield (q/ha)	Cost of Cultivation (Rs./ha)	Gross Return (Rs./ha)	Net Return (Rs./ha)	BC Ratio
Local	16.5	82,440	1,26,275	43,837	1.5:1
HYV	24.5	1,46,050	2,47,500	1,01,450	1.7:1

Selling price of Marigold – Rs. 50/-/ kg.				
Crop	**Spacing**	**Req. plant material/acre**	**Rate (Rs.)**	**Total cost of the plant material**
Tuberose	30 cm x30 cm	36000nos	Rs. 0.50/- Bulb	Rs.18000

Orchids

Technical details of the technology

The climate of these islands favors the growth of number of tropical orchids, without resorting to any sophisticated growing structures. Orchids are the mostly popular for their tremendous long vase life with fascinated colours. The islands have a large area (25000ha) under coconut plantations and 90 million nuts are being produced every year. The coconut shells which are available in plenty are wasted with out any use, which can other wise be utilized as hanging pots. The following indigenous orchids like *Cymbidium bicolor, Dendrobium crumenatum Dendrobium formosum, Oberonia iridifolia* etc were found suitable to be grown in coconut shell. An ideal location is required, with optimum light (75%), air and humidity for healthy and normal growth and development. Propagation is done by division or Kekis. Coconut shell can be used after varnishing it, which enhances beauty, and prolongs life. The medium for growth should be broken bricks, charcoal, coconut husk @ (1:1:2) with proper drainage.

Input required

Disease free Kekis , dried coconut shell , growing media.

Source of availability

Division or Kekis can be procured from CARI, Port Blair.

ECONOMICS:

The estimated expenditure is Rs.20/- per hanging pots with the gross return of Rs. 200/- from 10 hanging pots with net income of Rs. 80/- per day.

Activity flow chart - (Growing Orchids in Coconut shell)