

Proposal for implementation of Orange cultivation in Jhalawar district – RSCB & JCCB

1.0 Present status

1.1 Agri. Horticulture in the district

The main agricultural produce of the district is Soya bean, maize and jowar during kharif season and wheat, mustard, chickpea and groundnuts are being produced during rabi season.

The district is famous for its horticultural produce like coriander among the seed spices and orange among the fruits. Apart from this other crops like guava, papaya and vegetables are also being cultivated.

1.2 Orange in Jhalawar

Orange cultivation in the state started initially in Jhalawar district during 1984-85 by the Department of Horticulture and established the district as a potential area for the crop as its agro climatic condition suited for its successful cultivation. There after cultivation spread to the neighbouring districts.

The Jhalawar district comprises seven tehsil viz. Jharlapartan, Pidawa, Pachpahar, Gangdhar, Aklera, Monohar Thana and Khanpur. At present orange is being cultivated in all the 7 tehsils of the district but more concentrated in 3 tehsil viz. Jharlapartan, Pidawa and Pachpahar.

The area and production under orange cultivation in the state during 2009-10 was as follows:

Table: Area under orange in Rajasthan during 2009-10

District	Area(ha)	% of area	Production (t)	Productivity (t/ha)
Jhalawar	8492	95.04	160509	18.90
Bhilwara	226	2.53	2915	12.89
Kota	116	1.29	1032	08.89
Pratapgarh	34	0.39	226	06.64
Others	67	0.75	1542	23.01
Total	8935	100.00	166224	

(Source: Dept. of Horticulture)

2.0 Constraints of orange cultivation in Jhalawar

NABARD team conducted field visit in Jhalawar district from 7 -11 January 2013 and consulted different stake holder on problems and prospects of orange cultivation in the district. NABARD has prepared a detailed project report on cultivation and development of orange industry in Jhalawar district. The present proposal is based on the report prepared by NABARD.

3.0 The proposal

3.1 Area expansion

In the present proposal an area of 8000 ha will be brought under orange cultivation in the district as follows:

Year >	2013-14	2014-15	2015-16	Total
Area(ha)	1000	3000	4000	8000

3.2 Planting material

The district is witnessing about 500-600 ha increase in orange area every year under new plantation and rejuvenation programme of NHM. There is no nursery of orange is available in the district and the entire planting material is being supplied by nurseries from Nagpur area of Maharashtra.

3.2.1 Planting material requirement

Year >	2013-14	2014-15	2015-16	Total
Area expansion (ha)	1000	3000	4000	8000
Rejuvenation (ha)	600	500	500	1600
Total area (ha)	1600	3500	4500	9600
Planting material reqt.(lakh)	5.0	10.0	14.0	29.0

During 2013-14, entire planting material of 5.0 lakh would be imported from Nagpur of Maharashtra. Thereafter from the year 2014-15, 70 % planting material would be brought from Nagpur and rest will be developed by College of Horticulture & Forestry, Jhalawar. From 3rd year onwards the Horticulture College would be in a position to supply planting material in large quantity.

Necessary arrangement for developing planting material by the College will be taken care by the project.

3.3 Unit cost

A unit cost of Rs. 1.25 lakh per ha over a period of 5 years has been worked out based on the field data (Annexure - 1(a), 1(b) & 1(c).

3.4 Maintenance cost

For the old orchards, from 6th year onward an amount of Rs. 35000/ha would be required towards maintenance cost which shall be provided as crop loan from the bank. About 40% area would be covered under crop loan. The total financial requirement would be as follows:

Year >	2013-14	2014-15	2015-16	Total
Orchard to be covered for maintenance (ha)	9000	9100	10500	
Total maintenance cost (lakh)	3150	3185	3675	10010
Crop loan requirement @40% of above	1260	1274	1470	4004

3.5 NHM subsidy

At present National Horticulture Mission is under implementation in the district. The NHM provides subsidy for new orange plantation @ Rs. 30000/ ha. over a period of 3 years

1st year - Rs. 18000/ ha

2nd year - Rs. 6000/ ha

3rd year - Rs. 6000/ ha

The NHM subsidy has been taken into account for calculation of financial requirement by the bank.

3.6 Irrigation

All the farmers having irrigation facilities mostly bore well & some farmers having dug well also. The scientific method of irrigation is not followed by the farmers. The farmers do not use drip thinking that plants getting inadequate water supply through drip pipes.

In the present proposal the new as well as some old orchard will be brought Under National Micro Irrigation Mission (NMIM) implemented by the state Govt. which provides 90% subsidy. Area to be brought under drip irrigation in the next three year would be as follows

Year >	2013-14	2014-15	2015-16	Total
Area to be brought under drip (ha)	3500	3000	3500	10000
Drip irrigation cost (lakh)	836	717	836	2390
Subsidy @90% (Rs. lakh)	753	645	753	2151
Margin money @10% (Rs. lakh)	84	72	84	239

3.7 Extension services by Horticulture Dept.

The District Horticulture Department is manned by Assistant Director. The necessary technical assistance would be provided by the Department.

3.8 Training to farmers

Due to lack of proper extension services by the Horticulture Department, the farmers do not follow the scientific method of orange cultivation. There is strong need for imparting training to the farmers on regular basis which will help in increasing quality of fruit and better management of orchards. The training requirement has been assessed as follows:

Place of land planted with fruit trees.

Year >	2013-14	2014-15	2015-16	Total
No. of farmers to be trained	1000	1000	1000	3000
Financial reqt. (lakh)	15.25	15.25	15.25	45.75

The training expenditure will be given as grant by NABARD for popularizing the orange cultivation in the district.

3.9 Marketing of orange

The farmers of the Jhalawar district took mrig bahar crop which flower during April- May and harvesting starts in March - April. About 90 % of farmer sale their produce at pre harvests stage on contract basis to the fruit traders. There is

only one fruit & vegetable mandi at Bhavanimandi. There is no mechanised grading packing unit in the mandi for oranges. Manually oranges are graded and packed in wooden as well as card board boxes.

3.9.1 Brand development

Although the quality of the Jhalawar orange is good, market acceptance of the fruit is less as Nagpur is the main player in the orange market. Jhalawar oranges sometime sold in the market as Nagpur oranges. During the year 2011-12 an attempt was made jointly by IIRD, Zila Parishad & NABARD by developing 'JAGO' brand for Jhalawar orange. The brand was not popular due to lack of publicity. There is need for advertising the brand in print and electronic media for popularising Jhalawar orange. In the present proposal an amount of Rs. 20.0 lakh has been earmarked for this purpose and the entire amount would be given as grant by NABARD.

3.10 Engagement of an NGO

As the programme will be implemented for five years and large area would be brought under cultivation and different Departments are involved in subsidy release and training to the farmers, an NGO's service shall be availed. There will be 50 village level volunteers, 3 Tehsil level Horticulture supervisors, and One project Manager who will be looking after the smooth implementation of the proposal. The NGOs over head cost shall be provided by NABARD as grant. The NGO's overhead cost would be as follows:

Year >>	2013-14	2014-15	2015-16	2016-17	2017-18	Total
Amt (Rs. lakh)	15.36	21.36	21.36	21.36	21.36	100.80

3.11 Financial requirement

The total cost involved in the present project is given below. Detail estimate given in annexure - II.

Total project cost	- Rs.17103.0 lakh
Subsidy from NHM,NMIM	- Rs. 4791.0 lakh
Grant Assistance (NB)	- Rs 230.0 lakh
Total investment cost	- Rs. 12083.0 lakh
Crop loan	- Rs. 4004.0 lakh
Term loan reqt.	- Rs. 8079.0 lakh
Term loan Margin @ 10%	- Rs. 808.0 lakh
Bank Loan @90%	- Rs. 7271.0 lakh

3.12 Bank loan

The financial assistance to the growers' shall be met by NABARD under Producers Organisation Development Fund (PODF) which will be extended to Rajasthan State Co-operative Bank and intern RSCB will lend to Jhalawar Central Co-operative Bank.

3.13. Interest

The rate of interest shall be decided mutually by RSCB & NABARD.

3.14 Repayment period

The entire loan amount will be repaid by RSCB to NABARD in 7 years with a principal moratorium of 4 years.

3.15 Increase in area & yield

After implementation of the present proposal, area and yield shall be reached to the following position.

Area:

Year>>	2011-12	2012-13 (expected)	Proposed			Total
			2013-14	2014-15	2015-16	
Area (ha)	9091	10500	1000	3000	4000	18500

Yield:

Year>>	2011-12	2012-13 (expected)	Expected				
			2013-14	2014-15	2015-16	2016-17	2017-18
Yield(t)	164896	189630	218075	222342	227248	232891	239380

Farm Model of 1.0 ha orange cultivation in Jhalawar district

variety Nagpur Orange
 Spacing in meter 6 m X 6 m
 No. of plants 275
 Planting material Grafted plants

Items	I Yr	II Yr	III Yr	IV Yr	V Yr	Total
Land preparation	1500	0	0	0	0	1500
Digging and filling up of pits	4000	0	0	0	0	4000
Plant material	9060	0	0	0	0	9060
Planting and staking	2000	0	0	0	0	2000
Cost of FYM	2000	4000	4000	4000	4000	18000
Cost of fertilizers	656	1333	2965	4153	5296	14403
Manures & fertilizers application	2000	3000	3000	3000	4000	15000
Irrigation	2000	4000	4000	5000	6000	21000
Plant protection measures	1750	1750	1750	3500	3500	12250
Appl. of plant protection	400	1200	1200	1600	1600	6000
Interculture	2000	3000	4000	4000	5000	18000
Harvesting	0	0	0	0	4000	4000
TOTAL	27316	18273	20905	25243	33386	125203
Rounded off	27000	18000	21000	25000	34000	125000

Yield	V Yr	VI Yr	VII Yr	VIII Yr	IX Yr	X Yr	XI Yr onwards
Kg per plant	20	40	60	80	90	100	120
Kg per 1.0 ha	5500	11000	16500	22000	24750	27500	33000
Sale price @ Rs.8.0 per kg	44000	88000	132000	176000	198000	220000	264000

Maintenance cost Rs. 35000 from 6 th year onwards
 Economic life 20 years

Repayment schedule - 1.0 ha orange cultivation in Jhalawar district

(Amt. in Rs.)

TFO 125000
Margin 10 % 12500
BL 112500

Year	Loan O/s at the beginning of the year	Interest@13.0%	Gross surplus	Repayment		Deferred interest	Total outgoing	Net surplus	Loan O/s at the end of the year
				Principal	Interest				
I	24300	3159	0	0	3159	0	3159	0	24300
II	40500	5265	0	0	5265	0	5265	0	40500
III	59400	7722	0	0	7722	0	7722	0	59400
IV	81900	10647	0	0	10647	0	10647	0	81900
V	112500	14625	44000	25000	14625	0	39625	4375	87500
VI	87500	11375	53000	35000	11375	0	46375	6625	52500
VII	52500	6825	97000	52500	6825	0	59325	37675	0

*Interest during first 4 years would be met out of inter crop.

Summary of cost estimation for development of orange cultivation in Jhalawar district

Sr. No.	Item of investment	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-2020	Total
(Rs. lakh)									
A	Investment cost								
1	Plantation of new area	270.0	990.0	1830.0	1500.0	1930.0	2020.0	1360.0	10000.0
2	Maintenance cost of old orchard	1260.0	1274.0	1470.0	0.0	0.0	0.0	0.0	4004.0
3	Installation of drip irrigation	836.4	716.9	836.4	0.0	0.0	0.0	0.0	2389.6
4	Rejuvenation cost	180.0	150.0	150.0	0.0	0.0	0.0	0.0	480.0
5	Stocking of planting material	3.6	2.3	2.3	0.0	0.0	0.0	0.0	8.1
6	Nursery development by Horti. College	19.9	13.9	0.0	0.0	0.0	0.0	0.0	33.9
7	Training expenditure	15.3	15.3	15.3	0.0	0.0	0.0	0.0	45.8
8	Brand Development/ PO development	20.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0
9	NGOs overhead expenditure	15.4	21.4	21.4	21.4	21.4	0.0	0.0	100.8
10	Special officer at JCCB	4.2	4.2	4.2	4.2	4.2	0.0	0.0	21.0
	Total investment cost	2624.7	3187.9	4329.4	1625.6	1955.6	2020.0	1360.0	17103.1
B	Subsidy								
11	Subsidy on planting new area-NHM	0.0	180.0	600.0	960.0	420.0	240.0	0.0	2400.0
12	Subsidy on drip irrigation - NMMI	752.7	645.2	752.7	0.0	0.0	0.0	0.0	2150.6
13	Subsidy on Rejuvenation - NHM	90.0	75.0	75.0	0.0	0.0	0.0	0.0	240.0
	Total subsidy	842.7	900.2	1427.7	960.0	420.0	240.0	0.0	4790.6
C	Grant assistance								
14	NGOs overhead expenditure - NB	15.4	21.4	21.4	21.4	21.4	0.0	0.0	100.8
15	Training expenditure - NB	15.3	15.3	15.3	0.0	0.0	0.0	0.0	45.8
16	Brand Development - NB	20.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0
17	Special officer at JCCB	4.2	4.2	4.2	4.2	4.2	0.0	0.0	21.0
18	Stocking of planting material	3.6	2.3	2.3	0.0	0.0	0.0	0.0	8.1
19	Nursery development by Horti. College	19.9	13.9	0.0	0.0	0.0	0.0	0.0	33.9
	Total Grant assistance	78.4	57.0	43.1	25.6	25.6	0.0	0.0	229.5
D	Balance investment cost {A-(B+C)}	1703.6	2230.7	2858.6	640.0	1510.0	1780.0	1360.0	12083.0
	Crop loan for maintenance cost	1260.0	1274.0	1470.0	0.0	0.0	0.0	0.0	4004.0
E	Total term loan	443.6	956.7	1388.6	640.0	1510.0	1780.0	1360.0	8079.0
F	Margin Money @ 10% on 'E'	44.4	95.7	138.9	64.0	151.0	178.0	136.0	807.9
G	Bank Loan @ 90% of 'F'	399.3	861.0	1249.8	576.0	1359.0	1602.0	1224.0	7271.1