

Special Programme on Oil Palm Area Expansion (OPAE) under RKVY

1. Background

1.1 India is one of the major producers and consumers of vegetable oils. India accounts for 12-15% of the area under oilseeds and 6-7% of the production of vegetable oil in the world. Despite annual production of about 27.00 million tonnes of oilseeds in the country, the availability of edible oil is insufficient to meet the domestic demand. The gap in demand and supply of edible oil is met through imports.

1.2 The per capita consumption of vegetable oil in India in 2009-10 is estimated at 14.10 Kg/capita/annum. This consumption level is far below the global average of 23.60 kg/capita/annum and even below neighbouring countries like China and Pakistan where the consumption is 22.70kg and 21.70 kg/capita/ per annum respectively.

1.3 The import of vegetable oil witnessed a surge during 2008-09 and 2009-10. Imports increased from 5.60 million tonnes in 2007-08 to 8.18 million tonnes in 2008-09 and 8.82 million tonnes in 2009-10 (Oil Year-Nov-Oct). Almost stagnant domestic production of oilseeds and increased per capita consumption of edible oils has increased dependency on imports in recent years. The country currently produces less than 50% of its requirement of edible oils. The growth of the economy is expected to lead to increased per capita consumption of edible oils in the future resulting in greater import dependency.

1.4 Given the competing demands on agricultural land from various crops, the production of oilseeds can be increased only if productivity is significantly improved and oilseed farmers are able to obtain remunerative and attractive prices. Oil Palm *Elaeis guineensis*, originated from West Africa, is the highest edible oil yielding perennial crop. It produces two distinct oils, i.e., palm oil and palm kernel oil, which are used for culinary as well as industrial purposes. Palm oil is derived from the fleshy mesocarp of the fruit, which contains about 45-55% of oil. Palm kernel oil, obtained from the kernel of oil palm, is the source of lauric oils. Oil palm produces 4 to 6 tonnes of crude palm oil/ha and 0.4 to 0.6 tonnes of palm kernel oil/ha from the 4th to the 25th year of its productive life span compared to production of less than 1 tonne/ha from other oilseeds. Palm oil has good acceptance as a cooking medium because of its price advantage. It is also the raw material for manufacturing oleochemicals used in making soaps, candles, plasticizers, etc.

2. Ongoing Programme for Oil Palm Development.

2.1 Oil Palm Development Programme (OPDP) was launched during 1991-92 under the “Technology Mission on Oilseeds and Pulses” (TMOP) with a focus on area expansion in the states of Andhra Pradesh, Karnataka, Tamil Nadu, Orissa, Gujarat and Goa. From 2004-05 onwards, the scheme is being implemented as part of the “Integrated Scheme of Oilseeds, Pulses, Oil Palm & Maize” (ISOPOM) and provides support for Oil Palm cultivation in 12 states viz, Andhra Pradesh, Assam, Gujarat, Goa, Karnataka, Kerala, Maharashtra, Mizoram, Orissa, Tamil Nadu, Tripura, & West Bengal. However,

Assam, Maharashtra and West Bengal did not undertake Oil Palm cultivation though Maharashtra has now undertaken oil palm area expansion w.e.f. 2010-11. Under ISOPOM, support is provided for planting material, cultivation cost, installation of drip irrigation system, diesel pump sets, training, development of waste land and technology transfer through demonstration and publicity.

2.2 Fresh Fruit Bunches (FFBs) of oil palm are highly perishable and need to be processed within 24 hrs of harvest. Realizing the special circumstances regarding the cultivation, gestation, sustainability, production, harvesting and processing of Oil Palm, the State Departments of Agriculture/Horticulture have tried to establish a linkage of oil palm farmers with oil palm processors and oil palm industry. The States are implementing area expansion programme under ISOPOM in association with the oil palm industry. Identified areas are allocated to private entrepreneurs for overall development of the sector i.e. from plantation to procurement of Fresh Fruit Bunches (FFBs) at the prices fixed by the Project Management Committee (PMC) constituted under OPDP. Presently AP, Tamil Nadu and Goa have enacted Oil Palm Act while other States are yet to initiate such regulatory provision.

3. Requirement for New Initiatives:-

A substantial portion of our requirement of edible oil is met through import of palm oil from Indonesia and Malaysia. Any disruption in the supply of Palm Oil from these countries will put India in difficult situation, especially since a large quantity of the global production of vegetable oils is being utilized for production of bio-diesel in Europe and North America. Such non-food use of edible oils ultimately reduces their availability and pushes up their prices. It is therefore necessary to exploit domestic resources to ensure edible oil security to the extent possible on the lines of mineral oil security strategy. Therefore, there is an urgent need to intensify efforts for area expansion under oil palm in potential States. It is estimated that India has the potential to cultivate Oil Palm in 1.03 million hectares to produce 4-5 million tonnes of palm oil which would be able to cater to the consumption requirement of 330 million people @15kg/capita/ per annum.

4. Brainstorming Sessions on Oil Palm.

4.1 The strategy for the development of a road map for promoting Oilseeds and Oil Palm production in the country, was discussed in workshop held on 2nd June, 2010 in Krishi Bhawan, New Delhi under the Chairmanship of Secretary (A&C) wherein States, ICAR, processors and other stake holders participated. ICAR also organized a Session on Oil Palm on 7th June, 2010 under the Chairmanship of the Director General, ICAR at NASC Complex Pusa, New Delhi. The Department of Agriculture & Cooperation organized two Sessions for Strategies on Oil Palm and Oilseeds on 4th and 5th October, 2010. The recommendations of these Sessions are available at www.agricoop.nic.in

4.2 Four follow-up Regional Workshops were organized at Bhubaneswar, Gandhinagar, Bengaluru and Chandigarh from 23rd December, 2010 to 7th January, 2011 to discuss the strategy for enhancing the production and productivity of oilseeds and oil palm. Presentations were made by States, ICAR and oil palm processors for identifying the constraints impeding the growth of the Oil Palm sector, as well as suggesting the measures required to address these constraints by restructuring the existing Oil Palm

programme of ISOPOM in order to include new interventions as identified by Dr. Chaddha Committee in its report of 2006, and enhance incentives on various components, include incentives for setting up oil palm processing units, new seed gardens, protect oil palm growers against fall in prices of FFBs, review of existing FFBs pricing formula, and identification/inclusion of new areas for oil palm cultivation.

4.3 Government of India has constituted two Committees, the first to assess the potential area for oil palm cultivation in the States outside the purview of Chaddha Committee constituted in 2005 and the second to review and to develop a formula of FFBs pricing acceptable to farmers and processors.

5. Objective

A special initiative is being undertaken under RKVY during 2011-12 for implementation of a Special Programme on Oil Palm Area Expansion (OPAE) in order to augment the production of palm oil by 2.5 to 3.00 lakh tonnes in the next 5 years .

6. Proposal

It is proposed to undertake area expansion in 60000 hectares during 2011-12 through Special Programme on Oil Palm Area Expansion (OPAE) under RKVY. Priority will be given to expand area under the purview of existing mills so as to increase the technical and economic viability of their operations.

6.1 Major R&D constraints in oil palm cultivation and future research needs:-

Research on oil palm has to focus on the development/identification of the most suitable planting material. There is also need for development of tissue culture protocols for micro-propagation of the elite palms so developed/ identified in order that sufficient planting material can quickly be made available to the oil palm growers. Scope also exists for use of technology for genetic manipulation by using molecular markers to regulate shell thickness and dwarfness and evolving dwarf hybrids with high FFB yields. Research is also needed for improvement in processing technology for achieving better Oil Extraction Ratio(OER) with low FFA. Research efforts are also required for crop development measures/ techniques viz; integrated water and nutrient management for higher and sustainable productivity, improving nutrient use efficiency, integrated disease and pest management and development of improved tools and machinery for harvesting. Focus has to be on the standardization of technologies for product development and diversification for value added products.

6.2 Support under OPAE for Oil Palm research components: The Directorate of Oil Palm Research (DoPR), ICAR Pedavegi is the only organization providing research support to Oil Palm Development Programme in the country. There is need to support DoPR for building the confidence of researchers, farmers, extension workers and processors/ entrepreneurs in the use of the latest technology in oil palm cultivation. This programme will provide support to strengthen the Directorate of Oil Palm Research (DoPR), ICAR Pedavegi and its regional centres for identification of potential areas for oil palm cultivation in States, import of exotic germplasm/ planting material for trials, demonstration, etc for adaptation and evaluation of their performance and other economic

attributes, strengthening of training infrastructure, conducting trainings of farmers and extension workers, development of tissue culture protocols, preservation and maintenance of germplasm, strengthening of existing seeds gardens, ICT initiatives, procurement of modern machinery for demonstrations, monitoring and evaluation etc. It is proposed to earmark Rs.200.00 lakh to DoPR, ICAR during 2011-12. Financial support will be provided to DoPR for the aforesaid components from 1% of the outlay that is earmarked for meeting administrative expenditure, etc.

6.3 Oil Palm Area Expansion (OPAE) Programme: In order to bring 60000 hectares area under oil palm cultivation during 2011-12, it is proposed to provide incentives to growers for identified critical interventions viz; planting material, compensation for loss of income of the farmers during the gestation period, pump set, drip irrigation system, support for intercropping, vermi-compost pit, bore wells/water harvesting tanks/fertigation tanks, PP chemicals/INM/IPM/fertigation/tree guards etc. The States may also dovetail these components with other interventions under ISOPOM and other schemes for wasteland development, creation of irrigation facilities, publicity, contingency, etc. The details of expenditure on the proposed interventions are at **Annexure- I & II**.

6.4 Oil Palm plantations will require to be maintained during the entire gestation period of 4 years before they start bearing fruit. Support for this purpose would have to be provided to the growers. Further, oil palm growers would be encouraged to grow intercrops during the gestation period of 4 years till the oil palm start yielding FFBS to partially compensate them for loss of income. For this, funds of Rs. 151.50 crore will be required during next three years i.e Rs.43.50 crore in 2012-13, Rs.49.50 crore in 2013-14 and Rs58.50 crore in 2014-15. The details of the proposed support for 3 years of gestation period for critical components are at **Annexure-III**. This could be provided under regular RKVY allocation in case the programme does not continue in the XII Plan.

6.5 Support for Processing Units: Government of India has been promoting Oil Palm Development Programme under the Centrally Sponsored Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM) w.e.f.1.4.2004. ISOPOM does not provide support to processing units despite the fact that FFBS of Oil Palm should be processed within 24 hrs of harvesting. Lack of oil palm mills in States like Mizoram where 9759 hectares has already been brought under oil palm, dissuade farmers from bringing additional area under oil palm cultivation. In fact, some plantations which had started bearing FFBS have since been destroyed by farmers in the absence of marketing facilities. Oil Palm entrepreneurs have requested Government of India to provide support in form of subsidy for setting up oil palm processing units on the lines of PHT scheme of TMOP which has been discontinued w.e.f. 2005. PHT scheme had a provision of subsidy for setting up Oil Palm mill @ 60% of the cost of plant and equipment limited to Rs.240.00 lakh per unit of 2.5MT/hr FFBS processing capacity expandable up to 5 MT/hr FFBS capacity. It is proposed to provide subsidy for setting up of oil palm mills through State Department of Agriculture to sustain the confidence of oil palm cultivators. It is proposed to provide subsidy to entrepreneurs @ 50% of the cost of plant and equipment limited to Rs.250.00 lakh per unit of 5 MT/hr FFBS capacity through the State Department of Agriculture. An amount of Rs.1000.00 lakh will be earmarked for this purpose during 2011-12. This step will encourage the farmers of potential States to take up oil palm cultivation.

6.6 Palm Oil meets food standards under the Codex Alimentarius Commission. A balanced vegetable oil and source of energy, it is free of cholesterol and trans-fatty acids and packed with health inducing carotenoids (a rich source of vitamin A) and Vitamin E. However, there is widespread belief, though erroneous, that palm oil is not good for health. Provision has been made for publicity component for popularizing the nutritional values of palm oil amongst the various section of the society.

6.7 The State/Agency wise summary of proposed outlay is as under;

SN	States	Outlay proposed (Rs. in Lakhs)
1	Andhra Pradesh	19200.00
2	Karnataka	3360.00
3	Tamil Nadu	3360.00
4	Gujarat	480.00
5	Orissa	1776.00
6	Mizoram	1480.00
7	Chhattisgarh	48.00
8	Maharashtra	96.00
9	ICAR	200.00
	Total	30000.00

7. Institutional Linkages:

ICAR has established the Directorate of Oil Palm Research (DoPR) at Pedavegi, Andhra Pradesh and its Regional Centre at Pallode in Kerala. Besides these Research Centers, ICAR has recently started All India Coordinated Research Project Centres at Vajayarai (AP), Gangawathi (Karnataka), Aduthurai (TN), Mulde (MS) and recently in Bihar and Arunachal Pradesh. The scientists of ICAR & SAUs will be utilized in implementation of the project. The programme envisages capacity building under this project.

8. Implementation:

8.1 The programme for oil palm area expansion will be implemented through State Department of Agriculture/Horticulture. OPAE includes critical interventions for research and development activities for achieving area expansion and confidence building measures for oil palm growers. The programme will be monitored by States, DoPR and DAC in association with SAUs.

8.2 In order to monitor the programme effectively, DoPR will be provided technical manpower for the project period in form of JRFs/SRFs/RAs as per requirement. JRFs/SRFs/RAs appointed by DoPR under OPAE will be paid honorarium etc as per the

norms of ICAR to monitor the execution of the programme by various agencies in the States at the grassroot level. OPAE will be implemented in 8 States to achieve the target area of 60 thousand hectare in 2011-12. DoPR will appoint 11 technical personnel under OPAE, out of which 4 will be given the responsibility to monitor 10 thousand hectare plantation each in Andhra Pradesh. For each of the remaining States, 1 person will be deputed to monitor the implementation of OPAE. These monitors will remain under the control of DoPR for submission of reports to the States and Government of India.

9. Financial Implication:

9.1 The budget/outlay of the programme will be utilized for following interventions;

(i)	Planting Materials-	Rs.6000.00 lakh
(ii)	Cost of cultivation-	Rs.3600.00lakh
(iii)	Supply of Drip systems-	Rs.5924.00 lakh
(iv)	Supply of pump sets-	Rs.4969.00 lakh
(v)	Inter-cropping -	Rs.3000.00 lakh
(vi)	INM/IPM etc-	Rs.3000.00 lakh
(vii)	Vermi-compost etc-	Rs.750.00 lakh
(viii)	Water harvesting/Borewell-	Rs.1558.00 lakh
(ix)	Processing Units	Rs.1000.00 lakh
(x)	ICAR/SAUs	Rs.200.00 lakh
	Total	Rs.30001.00 lakh

ANNEXURE-I

Component Wise expenditure under Special Programme on Oil Palm Area Expansion (OPAE) under RKVY during 2011-12

SN	Components		Unit	Subsidy amount per Unit (In Rs)	Physical targets		Financial Targets (Rs. in Lkah)	Remark/Justification
Part-I : Area Expansion								
1	Distribution of Planting Material:	(i) 85% of the cost of planting material limited to Rs. 10000/- per ha for entire land holding of the farmer.	ha	10000.00	60000		6000.00	Assistance enhanced for planting material from 75% of the cost limited to Rs.7500/ha (under ISOPOM) to 85% of the cost limited to Rs.10000/ha
2	Assistance for cost of cultivation during gestation period	50% of the cost of cultivation to the farmers @Rs.6000/ha for first year	ha	6000.00	60000		3600.00	As recommended by Chaddha Committee in its report of 2006 Ist year- Rs6000/ha IInd Year- Rs3500/ha IIIrd Year- Rs.4500/ha IV Year- Rs.6000/ha
3	Supply of Drip irrigation systems	50% of the cost of drip irrigation system for spacing of oil palm plantation at 9X9M. The assistance will be provided as per the subsidy admissible under National Mission on Micro-Irrigation (NMMI) up to 5 ha per farmer.	No. of Farmers	10450.00 17019.50 26352.00 33147.00 42109.50 60000	Target Area	No. of beneficiaries		
					42000	42000	4389.00	70% area for 1 ha farmers incl. SM/MF
					12000	6000	1021.17	20% area for 2 ha farmers
					3000	1000	263.52	5% area for 3 ha farmers
					1800	450	149.16	3% area for 4 ha farmers
					1200	240	101.06	2% area for 5 ha farmers
				60000	49690	5923.91		
4	Supply Diesel/Electric pump set for drip system	Pump set (diesel/electric) of capacity up to 10 HP @ 50% of the cost limited to Rs10000/pump set.	No. of Farmers	10000.00	Target Area	No. of beneficiaries		
					42000	42000	4200.00	70% area for 1 ha farmers incl. SM/MF
					12000	6000	600.00	20% area for 2 ha farmers
					3000	1000	100.00	5% area for 3 ha farmers
					1800	450	45.00	3% area for 4 ha farmers
					1200	240	24.00	2% area for 5 ha farmers
				60000	49690	4969.00		
5	Inputs to inter-cropping in Oil Palm fields	50% of the cost limited to @ Rs.10000/hectare for purchase of planting material of horticultural inter-crops/ seed material of fields crops (75% funds for procurement of planting material/seeds and 25% for production/protection inputs for inter-crop fields)	ha	10000.00	30000		3000.00	50% of area expansion target for inter-crops.
6	Assistance for INM,IPM,Fertigation,PPChemicals, tree guard etc limited to Rs.5000/ha	50% of the cost for INM,IPM,Fertigation,PPChemicals, tree guard etc limited to Rs.5000/ha	Ha	5000.00	60000		3000.00	Support for inputs such as Nutrients/ micro-nutrients/insecticides/pesticides/bio-control agents/tree guards/mesh etc
7	Construction of Vermi-compost Units at Oil Palm field	50% of the cost limited to Rs.15000/unit of 15 Meter length, 0.9 meter width and 0.24 meter depth	Nos	15000.00	5000		750.00	To promote use of organic manure and vermi-compost in oil palm
8	Subsidy for bore wells at oil palm farm	50% of the cost limited to Rs.50000/bore well or water harvesting structure	Nos	50000.00	3115		1557.50	Component recommended by Chaddha committee report in 2006
9	Setting up of Oil Palm processing units	50% of the cost limited to 250.00 lakh per unit for the mill of 5 MT/hr FFBs processing capacity		25000000.00	4		1000.00	
Total							29800.41	
Part-II		100%Support to ICAR for Research and Training on Oil Palm					200.00	
Grand Total							30000.41	
Rs.300 crore								

Proposed targets of area expansion under Oil Palm for OPAE under RKVY

Annexure-II

Sl. No.	State	Proposed Area expansion targets for OPAE under RKVY	% of total targetted area	Planting Material:		Cost of cultivation		Drip Irrigation systems											
				Physical (Ha)	Fin. (Rs. in Lakh)	Physical (Ha)	Fin. (Rs. in Lakh)	1ha set		2ha set		3ha set		4ha set		5ha set		Total Targets	
								Physical (No of beneficiaries)	Fin. (Rs. in Lakh)	Physical (No of beneficiaries)	Fin. (Rs. in Lakh)	Physical (No of beneficiaries)	Fin. (Rs. in Lakh)	Physical (No of beneficiaries)	Fin. (Rs. in Lakh)	Physical (No of beneficiaries)	Fin. (Rs. in Lakh)	Physical (No of beneficiaries)	Fin. (Rs. in Lakh)
1	Andhra Pradesh	40000	66.67	40000	4000.00	40000	2400.00	28000	2926.00	4000	680.78	667	175.68	300	99.37	160	67.38	33127	3949.21
2	Karnataka	7000	11.67	7000	700.00	7000	420.00	4900	512.05	700	119.14	117	30.74	52.5	17.39	28	11.79	5797	691.11
3	Tamil Nadu	7000	11.67	7000	700.00	7000	420.00	4900	512.05	700	119.14	117	30.74	52.5	17.39	28	11.79	5797	691.11
4	Gujarat	1000	1.67	1000	100.00	1000	60.00	700	73.15	100	17.02	17	4.39	7.5	2.48	4	1.68	828	98.73
5	Orissa	3700	6.17	3700	370.00	3700	222.00	2590	270.66	370	62.97	62	16.25	27.75	9.19	14.8	6.23	3064	365.30
6	Mizoram	1000	1.67	1000	100.00	1000	60.00	700	73.15	100	17.02	17	4.39	7.5	2.48	4	1.68	828	98.73
7	Chhattisgarh	100	0.17	100	10.00	100	6.00	70	7.32	10	1.70	2	0.44	0.75	0.25	0.4	0.17	83	9.87
8	Maharashtra	200	0.33	200	20.00	200	12.00	140	14.63	20	3.40	3	0.88	1.5	0.50	0.8	0.34	166	19.75
	Total	60000	100.00	60000	6000.00	60000	3600.00	42000	4389.00	6000	1021.17	1000	263.52	450	149.06	240	101.06	49690	5923.81
	ICAR																		Contd.....

Proposed targets of area expansion under Oil Palm for OPAE under RKVY

Sl. No.	State	Proposed Area expansion targets for OPAE under RKVY	% of total targetted area	Supply of Diesal /Electric pump set												Intercropping		INM/IPM/Fertigation & PP Chemicals/tree guards		Construction of Vermi-compost pits		Subsidy for bore wells/Water harvesting/fertigation tanks		Oil Palm Processing units	Total State wise allocation (Rs. in Lakh)	
				1ha		2ha		3ha		4ha		5ha		Total Targets		Physical (ha)	Fin. (Rs. in Lakh)	Physical (ha)	Fin. (Rs. in Lakh)	Physical (Nos /Units)	Fin. (Rs. in Lakh)	Physical (Nos /Units)	Fin. (Rs. in Lakh)			
				Physical (No of beneficiaries)	Fin. (Rs. in Lakh)	Physical (No of beneficiaries)	Fin. (Rs. in Lakh)	Physical (No of beneficiaries)	Fin. (Rs. in Lakh)	Physical (No of beneficiaries)	Fin. (Rs. in Lakh)	Physical (No of beneficiaries)	Fin. (Rs. in Lakh)	Physical (No of beneficiaries)	Fin. (Rs. in Lakh)											
1	Andhra Pradesh	40000	66.67	28000	2800.00	4000	400.00	667	66.67	300	30.00	160	16.00	33127	3312.67	20000	2000.00	40000	2000.00	3333	500.00	2077	1038.33	0.00	19200	
2	Karnataka	7000	11.67	4900	490.00	700	70.00	117	11.67	53	5.25	28	2.80	5797	579.72	3500	350.00	7000	350.00	583	87.50	363	181.71	0.00	3360	
3	Tamil Nadu	7000	11.67	4900	490.00	700	70.00	117	11.67	53	5.25	28	2.80	5797	579.72	3500	350.00	7000	350.00	583	87.50	363	181.71	0.00	3360	
4	Gujarat	1000	1.67	700	70.00	100	10.00	17	1.67	8	0.75	4	0.40	828	82.82	500	50.00	1000	50.00	83	12.50	52	25.96	0.00	480	
5	Orissa	3700	6.17	2590	259.00	370	37.00	62	6.17	28	2.78	15	1.48	3064	306.42	1850	185.00	3700	185.00	308	46.25	192	96.05	0.00	1776	
6	Mizoram	1000	1.67	700	70.00	100	10.00	17	1.67	8	0.75	4	0.40	828	82.82	500	50.00	1000	50.00	83	12.50	52	25.96	1000.00	1480	
7	Chhattisgarh	100	0.17	70	7.00	10	1.00	2	0.17	1	0.08	0	0.04	83	8.28	50	5.00	100	5.00	8	1.25	5	2.60	0.00	48	
8	Maharashtra	200	0.33	140	14.00	20	2.00	3	0.33	2	0.15	1	0.08	166	16.56	100	10.00	200	10.00	17	2.50	10	5.19	0.00	96	
	Total	60000	100.00	42000	4200.00	6000	600.00	1000	100.00	450	45.00	240	24.00	49690	4969.00	30000	3000.00	60000	3000.00	5000	750.00	3115	1557.50	1000.00	29800	
																									ICAR	200
																										30000

Rs.300 crore

30000

Tentative expenditure (year-wise) on targeted plantation under OPAE during three subsequent years of gestation period

(Rs. in Lakh)

Components	Targeted area	2012-13	2013-14	2014-15	Total	Remark
Cost of cultivation	60000.00	2100.00	2700.00	3600.00	8400.00	The Assistance for maintaining plantations as suggested by Dr. Chaddha Committee.
Intercropping	30000.00	1500.00	1500.00	1500.00	4500.00	Inputs subsidy for inputs/seeds/planting material @Rs.5000/ha for 3 years subsequent to plantation
INM/IPM etc	60000.00	750.00	750.00	750.00	2250.00	Inputs subsidy for INM/IPM inputs @Rs.1250/ha for 3 years subsequent to of plantation
Total		4350.00	4950.00	5850.00	15150.00	