

Brief note on OIL PALM

1. Significance of oil palm

Oil palm cultivation assumes significance for augmenting the indigenous availability of edible oil as it is the highest oil yielding perennial crop. With good planting material, irrigation and proper management, oil palm has the potential to produce 20-25 MT fresh fruit bunches (FFB) per hectare after attaining the age of 5 years. This in turn is capable of yielding 4-5 MT of palm oil and 0.4-0.5 MT palm kernel oil (PKO). In comparative terms, yield of palm oil is 5 times the yield of edible oil obtainable from traditional oilseeds. This perennial crop has an economic life span of 30 years, comprising three distinct phases viz. juvenile period (1-3 years), stabilizing period (4-8 years) and stabilized period (9-30 years). Palm oil is one of the major oils traded in global edible oil and fat market. At present, it is the largest source of vegetable oil in the world. Five countries mainly Indonesia, Malaysia, Nigeria, Thailand and Cambodia account for over 90% of the world's total production of FFBS.

2. Potential area of Oil Palm

Various Committees constituted by Department of Agriculture, Cooperation and Farmers Welfare (DAC& FW) have identified 19.33 lakh ha area suitable for oil palm cultivation in the country including 2.18 lakh ha area in the North Eastern States. Potential states were Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh, Karnataka, Kerala, Mizoram, Odisha and Tamil Nadu.

3. Constraints in Oil Palm cultivation

- Oil palm has a long gestation period and restricts income flow to farmers for at least 4-5 years.
- Small holdings of farmers with limited resources.
- Fluctuation in prices of CPO in the international market.
- Erratic monsoon leading to shortage of water.
- Competition from other economically viable crops such as rubber, arecanut, sugarcane, banana, coconut etc.
- Variation in import duty on edible oils.

4. Initiatives by Government of India

In view of the importance and significance of oil palm cultivation, DAC&FW had taken up Technology Mission on Oilseeds & Pulses (TMOP) in 1991-92 in the potential states. A comprehensive centrally sponsored scheme, Oil Palm Development Programme (OPDP) was taken up during VIII and IX Plan. During X and XI Plan, Government of India provided support for oil palm cultivation under Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM). Further to boost oil palm cultivation, Government of India had supported a Special Programme on Oil Palm Area Expansion (OPAE) under RKVY during the year 2011-12 with an objective to bring 60,000 ha area under Oil Palm cultivation, which continued till March, 2014.

4.1. During the XII Plan, National Mission on Oilseeds and Oil Palm (NMOOP) has been launched in which Mini Mission-II (MM-II) is dedicated to oil palm area expansion and productivity increases. MM-II of NMOOP is being implemented in 13 States viz; Andhra Pradesh, Assam, Arunachal Pradesh, Chhattisgarh, Gujarat, Karnataka, Kerala, Mizoram, Nagaland, Odisha, Tamil Nadu, Telangana and Goa. The funding pattern was 50:50 between Central and State Governments during 2014-15, which has been revised to 60:40 in case of general category States and 90:10 in case of North-Eastern and hill States from 2015-16.

4.2. Under MM-II, financial assistance is being provided to the farmers @ 85% cost of the planting material and @ 50% cost of the other components like maintenance cost of new plantations for four years, installation of drip-irrigation systems, diesel/electric pump-sets, bore-well/water harvesting structures/ponds, inputs for inter-cropping during gestation period, construction of vermi-compost units and purchase of machinery & tools etc.

4.3. Implementation of Centrally Sponsored Oil Palm Development Schemes have resulted in area expansion under oil palm from 8585 ha in 1991-92 to 3,16,600 ha by the end of 2016-17. Similarly, production of fresh fruit bunches (FFBs) and crude palm oil (CPO) have increased from 21,233 MT and 1,134 MT respectively in 1992-93 to 12,89,274 and 2,20,554 MT respectively in 2016-17. At present, Andhra Pradesh, Karnataka and Tamil Nadu are major oil palm growing States.

The State-wise details of area achieved under oil palm cultivation and production of FFBs and CPO up-to the year 2017-18 are given below:

Sl. No.	State	Area achieved during 2017-18 (in Ha)	Total Area Coverage upto March 2018	Production (in MT) in 2016-17		Production (in MT) in 2017-18	
				FFBs	CPO	FFBs	CPO
1.	Andhra Pradesh	6157	162689	1136579	190854	1427827	234695
2.	Telangana	1413	18312	88549	19979	147516	27274
3.	Karnataka	1120	43517	11912	2051	12917	2224
4.	Tamil Nadu	589	30900	7422	1115	6983	938
5.	Gujarat	76	5797	853	NA	-	-
6.	Goa	-	953	NA	NA	-	-
7.	Odisha	1005	21777	4965	NA	-	-
8.	Tripura	-	530	NA	NA	-	-
9.	Assam	814	1849	0	0	-	-
10.	Kerala	7	5785	34198	5929	30220	5191
11.	Maharashtra	-	1474	NA	NA	-	-
12.	Mizoram	885	28295	4796	626	-	-
13.	Chhattisgarh	773	4222	0	0	-	-
14.	Andaman & Nicobar	-	1593	NA	NA	-	-
15.	Arunachal Pradesh	843	1416	0	0	-	-
16.	Nagaland	800	1973	0	0	-	-
	Total	14482	331082	1289274	220554	1625463	270322

5. Involvement of Private entrepreneurs

5.1. State Governments have involved about 15 private entrepreneurs of which M/s Godrej Agrovot Pvt. Ltd., M/s Ruchi Soya Industries, M/s Food, Fats & Fertilizers and M/s Shivasais Oil Palm Ltd are the major ones for developing oil palm seedling nurseries and processing mills in their respective States. These companies have signed Memorandum of Understanding (MoU) with the State Governments who in turn have allotted area/ Mandals/Districts to the companies for new plantations. The companies have established nurseries in their allotted zone for developing seed gardens of oil palm from seed sprouts of indigenous as well as of exotic origin which takes about 10-12 months. They also extend technical support to the farmers for development of oil palm plantation.

5.2 After development of plantation, oil palm mills are also established by these companies. Government of India has also provided financial support for establishment of oil palm processing mill especially in NE/LW areas/hilly states/regions. So far 24 nos. oil palm processing mills have been established in different states having capacity of 312 MT/hrs for crushing of FFBS of oil palm.

6. Fixation of prices of FFBS recommended by CACP

The prices of oil palm Fresh Fruit Bunches (FFBS) are being paid to farmers by the private Oil Palm Developer Companies based on the CACP recommended formula i.e. 13.54% of net Crude Palm Oil (CPO) weighted average price, based upon 18% Oil Extraction Ratio (OER), plus 75.25 percent on 9% recovery of palm kernel nuts weighted average price. This is based on estimated cost of cultivation at 75.25 percent of the total cost of production of CPO from farm level to factory level. The formula has a direct co-relation to the landed price of CPO as the high ruling international price of CPO would provide better price to the oil palm growers. CACP has suggested that import duty of CPO should be triggered when the price of CPO falls below US\$800 per MT.

7. Price trend of FFBS in India

The month-wise price trend of FFBS in the States of Andhra Pradesh, from 2013-14 to 2017-18 is as under:

(Rs. per MT)

State	Year	April	May	June	July	Aug	Sep	Oct.	Nov	Dec	Jan	Feb	March
Andhra Pradesh	2013-14	5932	5808	6210	6464	6624	6971	6907	7900	7951	7824	7926	8441
	2014-15	8267	7938	7510	7472	7071	6424	6589	6598	6370	6803	6557	6595
	2015-16	6421	6473	6601	6240	5722	5352	5731	5733	5647	5837	6129	7207
	2016-17	7586	7839	7494	7250	7792	8434	8142	8177	8455	8679	8891	8155
	2017-18	7307	7321	6897	6897	6897	7702	8222	8222	8222	8251	8369	8909
	2018-19	9121	9002	8720									

(Approximately 90% of total FFBS production in Andhra Pradesh)

Brief note on TREE BORNE OILSEEDS (TBOs)

There are many species of plant found wild or cultivated inside as well as outside the forest areas containing sizeable amount of vegetable oil having domestic and industrial utility. Out of these species Neem, Karanja, Sal, Mahua, Cheura, Kokum, Simarouba, Jatropha, Jojoba, Wild apricot, Olive etc. have capability to grow and establish in varied agro-climatic conditions and in the waste land of the country.

As per estimates of Solvent Extractors' Association (SEA), India can produce about 11-15 lakh tonnes of oil for edible and industrial uses from TBO. About 5 lakh tonnes of TBO seeds are being collected and crushed to produce approximate 1 lakh tonne of oil. As per the survey report (2012) conducted by Indian Council of Forestry Research & Education (ICFRE), Dehradun, the above mentioned 11 TBOs are grown in about 14.7 lakh hectare area under Government or Private lands. Presently 7.5 to 10% of potential is being harnessed.

Many of these TBOs possess 20-60% oil content in seeds, which are edible fat and non-edible for industrial uses. Once they are planted, they continue to yield for about 60-150 years starting after gestation period without requiring much input in the later stage. TBOs have disadvantages namely long gestation period (2-8 years), harvesting coinciding with rainy season, very tall stature, involvement of higher mandays in harvesting, non-synchronized maturity, non-availability of manual/mechanical harvester etc. Besides, non-availability of superior genotypes/varieties/ hybrids with high seed yield and oil content are the other limiting factors which are essential requirements for augmenting potential of TBOs.

In order to meet the demand of edible oil in the country, Ministry of Agriculture, Cooperation and Farmer's Welfare, Government of India has launched National Mission on Oilseeds and Oil Palm (NMOOP) from April, 2014. Under NMOOP, Mini Mission-III on Tree Borne Oilseeds (TBOs) is dedicated to enhance area under TBOs with focus on utilization of wasteland. It has the objective of enhancing seed collection of TBOs from 9 lakh tonnes to 14 lakh tonnes and to augment elite planting materials for area expansion under waste land in the 28 states of the country

Under MM-III, assistance is provided to promote 11 TBOs namely Simarouba, Neem, Jojoba, Karanja, Mahua, Wild apricot, Cheura, Kokum, Jatropha, Tung and Olive having capability to grow and establish in varied agro-climatic conditions and in the waste land of the country.

The interventions proposed under MM-III are (i.) integrated development of nurseries and plantation on the wasteland, (ii) maintenance of TBOs plantation, (iii) incentives for undertaking intercropping with TBOs, (iii) distribution of pre-processing, processing and oil extraction equipment (iv) training of extension workers (ix) local initiatives/contingency. (x) R&D projects are also being supported through ICAR/SAUs/Central Institutes.

A brief note on HISTORY OF OILSEEDS DEVELOPMENT

Edible oil being an essential part of human diet and cakes of oilseeds as cattle feed, development of oilseeds has been a priority area of the Government. First Centrally Sponsored Scheme (CSS) – “Maximized production of groundnut” was launched during 1966-67 in the states of Andhra Pradesh, Karnataka and Uttar Pradesh. This scheme was extended in other groundnut growing states like Gujarat, Maharashtra, Madhya Pradesh, Odisha, Punjab, Rajasthan and Tamil Nadu during 1967-68 and 1968-69. The scheme continued during 4th Plan (1969-74). Demonstration of Rapeseed-Mustard (R&M), Soybean, Sunflower, Niger and Castor were also initiated during 4th Plan.

An Intensive Oilseeds Development Programme (IODP) covering Groundnut, R&M, Sesame, Safflower, Linseed and Castor was launched during 5th Plan (1974-79) in major oilseed growing states. The programme continued during 6th Plan (1984-89) with special project on Groundnut and Soybean.

National Oilseeds Development Project (NODP) was also launched during 6th Plan period (1984-85) and continued during 7th Plan (1985-86). Technology Mission on Oilseeds (TMO) was launched in 1986 with continuation of NODP on 50:50 sharing basis between Central and State Government and a special project entitled Oilseeds Production Thrust Project (OPTP) with 100% assistance from Central Government. These programme continued under the aegis of TMOP till 2003-04 with 100% assistance under OPTP upto 1990-91 and, thereafter, as a single oilseed production programme on 75:25 sharing basis.

The programme of oilseeds development including oil palm were re-structured and a new CSS entitled, “Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM)” was launched from 2004-05 and continued upto 2013-14 on 75:25 sharing basis. Pulses (2010-11) and Maize (2013-14) were subsequently transferred to National Food Security Mission (NFSM) and ISOPOM was re-structured into National Mission on Oilseeds and Oil Palm (NMOOP) including Tree Borne Oilseeds (TBOs) which was launched during 2014-15.

The above mentioned development programmes have contributed in enhanced oilseed production from 6.43 million tonnes (1966-67) to 22.11 million tonnes 1995-96 and ever highest production 32.75 million tonnes in 2013-14 with about three fold increase in productivity from 428 kg/ha (1966-67) to 1168 kg/ ha (2013-14). An area of > 3 lakh ha has been brought under oil palm plantation.

A brief on NATIONAL MISSION On Oilseeds and Oil Palm (NMOOP)

Background: NMOOP is built upon the achievements of the erstwhile schemes of Integrated Scheme of Oilseeds, Oil Palm and Maize (ISOPOM), Tree Borne Oilseeds (TBOs) and Oil Palm Area Expansion (OPAE) programme during the 11th Plan period, implementation of which had a positive impact on production and productivity of oilseeds and area expansion under Oil Palm with increased production of Fresh Fruit Bunches (FFB). NMOOP comprising 3 Mini Missions (MM), one each for Oilseeds (MM-I), Oil Palm (MM-II) and Tree Borne Oilseeds -TBOs (MM-III) was launched from April, 2014.

Mission Targets: The Mission aims to enhance production of oilseeds from 28.93 million tonnes (average of XI Plan) to 35.51 million tonnes by 2016-17 and to bring additional area of 1.25 lakh ha under oil palm cultivation with increase in productivity of FFBs from 4927 kg/ha to 15000 kg/ha by end of XII Plan.

Strategies: In order to increase the production and productivity of oilseeds, emphasis was to be laid on increasing the Seed Replacement Ratio (SRR) with focus on Varietal Replacement; increasing irrigation coverage under oilseeds; diversification of area from low yielding cereals to oilseeds; inter-cropping of oilseeds with cereals/ pulses/ sugarcane; use of rice fallows; expansion of cultivation of oil palm & TBOs in watersheds and wastelands; increasing availability of quality planting materials of oil palm & TBOs; enhancing procurement of oilseeds and collection & processing of TBOs. Inter-cropping during gestation period of oil palm and TBOs would provide economic return to the farmers when there is no production.

Funding Pattern: Cost of interventions under the Mission was in the ratio of 75:25 during 2014-15 which was changed to 50:50 and has been restructured to 60:40 between Centre and States. However, for some components like seed production, FLDs, minikits and adaptive research being implemented through central agencies/SAUs/ICAR institutes 100% central support is provided. The funds are released to the State Departments of Agriculture/Horticulture through State treasuries.

Area of Operation: The Mini Mission wise coverage is given as under:

Mini Mission-I: Andhra Pradesh, Assam, Ar. Pradesh, Bihar, Chhattisgarh, Gujarat, Haryana, Jammu & Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttar Pradesh, Uttarakhand and West Bengal.

Mini Mission-II: Andhra Pradesh, Assam, Ar. Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Karnataka, Kerala, Odisha, Sikkim, Tamil Nadu, Telangana, Tripura and West Bengal.

Mini Mission-III: Andhra Pradesh, Assam, Arunachal Pradesh, Bihar, Chhattisgarh, Gujarat, Goa, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttar Pradesh, Uttarakhand and West Bengal.

Central Agencies: In addition to the above mentioned States, Central Agencies like NSC, IFFCO, KRIBHCO, NAFED, HIL, SFAC and institutions of ICAR including SAUs and ICRISAT are also involved in production and distribution of seed including seed minikits, FLDs and R&D activities.

Interventions: In order to encourage oilseed growers various incentives like distribution of quality seeds and minikits through Central Agencies, plant protection equipments, bio-control

agents, micronutrients, improved farm implements, irrigation devices, block demonstrations IPM, training of farmers, etc are being supported under MM-I.

With a view to promote oil palm cultivation assistance is provided under MM-II for planting materials, maintenance cost, irrigation devices, establishment of seed gardens, inputs for inter-cropping, support for oil palm processing unit in North East /Hilly States and Left Wing areas, farmers training, etc.

Support is provided for TBOs planning materials, maintenance cost, incentives for inter-cropping, distribution of pre-processing and oil extraction equipments, farmers training etc under MM-III.

Financial progress: The State/Agency wise details of allocations and releases under ISOPOM and NMOOP during 2012-13 to 2016-17 are given below:

(Rs. in crore)

Year	Scheme	Allocation		Release
		Budget Estimate (BE)	Revised Estimate (RE)	
2012-13	ISOPOM	584.50	404.30	402.83
2013-14	ISOPOM	507.00	560.27	558.14
2014-15	NMOOP	433.00	333.00	318.97
2015-16	NMOOP	353.00	272.03	305.80
2016-17	NMOOP	500.00	376.00*	327.50

* Rs. 48.49 crore has been surrendered to Budget Division.

Impact of NMOOP during Twelfth Plan

NMOOP launched in 2014-15 is a continuing scheme. The Impact Evaluation Study of NMOOP has been assigned to an independent agency. The evaluation report is expected before September, 2017. However, year wise area, production and yield of oilseeds and area coverage under oil palm given below indicates a positive impact of NMOOP during Twelfth Plan period. Therefore, the scheme is proposed for continuation beyond 2016-17 and i.e. upto 2019-20 considering the importance of vegetable oil sector in the country.

Impact of NMOOP during Twelfth Plan

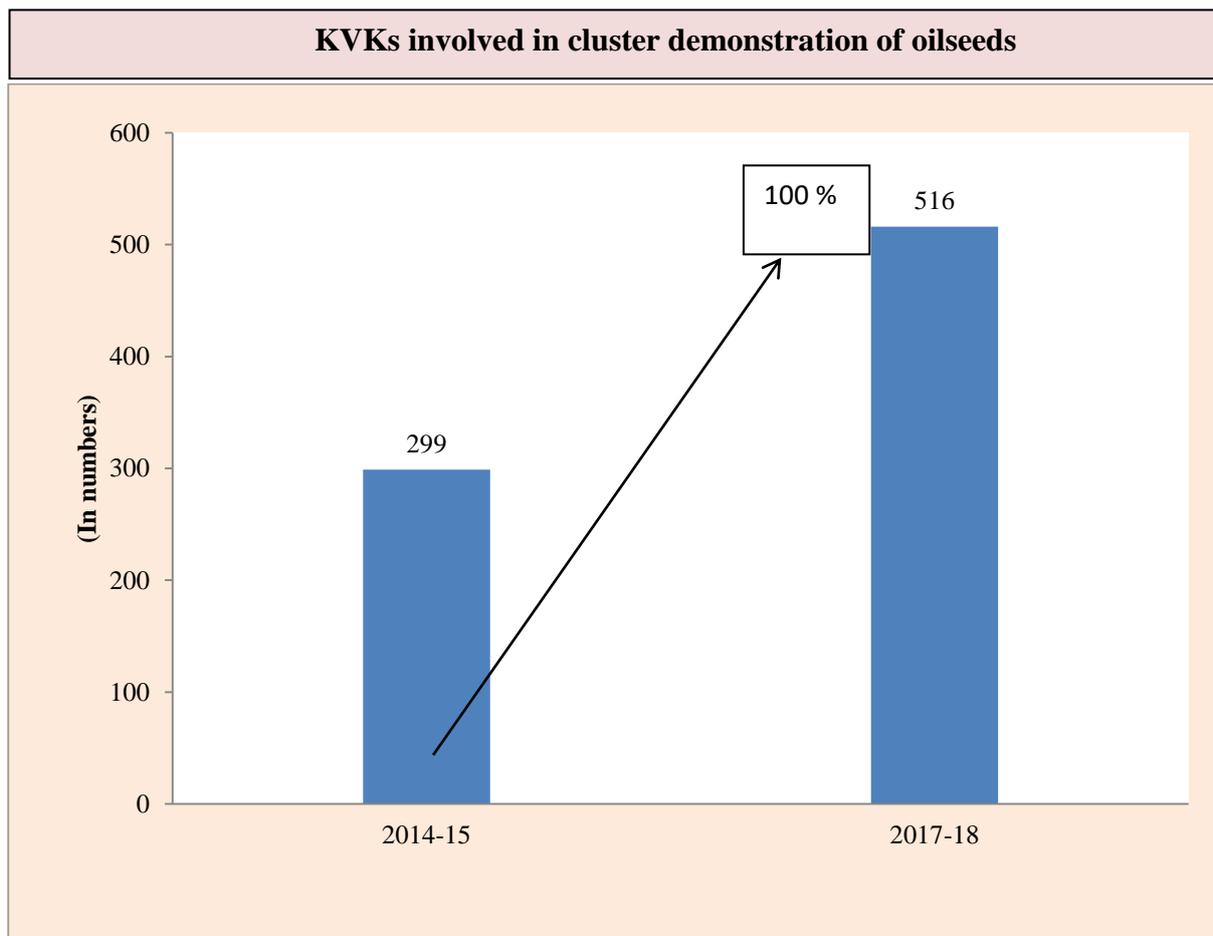
Scheme	Year	OILSEEDS			OIL PALM
		Area (Million Ha)	Production (Million Tonnes)	Yield (Kg/ha.)	Area Expansion (Ha)
ISOPOM	2007-12 Avg.	26.75	28.93	1082	-
	2012-13	26.48	30.94	1168	26300
	2013-14	28.05	32.75	1168	23183
NMOOP	2014-15	25.60	27.51	1075	17143
	2015-16	26.13	25.25	968	14425
	2016-17*	26.63	33.60	1261	15035
Average		26.57	30.01	1129	96086@

* 3rd Advance estimate; @ total

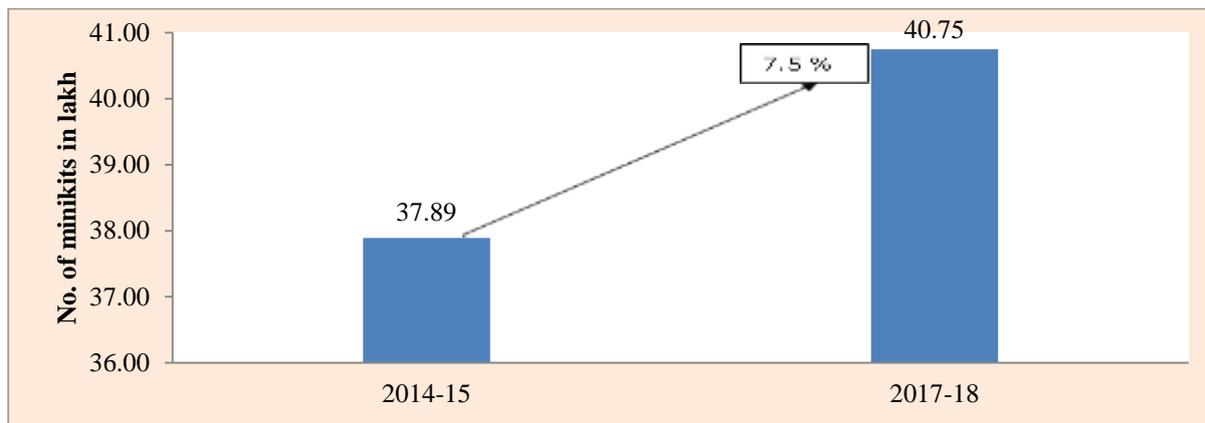
Achievement of NMOOP during last three years

MM-I (OILSEEDS)

- NMOOP aims to enhanced production of oilseeds from 28.93 million tonnes to 35.51 million tonnes of oilseeds by the end of 2016-17.
- Despite, delayed and deficit monsoon during last two consecutive years, oilseeds production has been sustained at an estimated production of 33.60 million tonnes during 2016-17 as against highest production 32.75 million tonnes in 2013-14.
- An average production of 30.30 million tones of has been achieved during 12th plan (2012-13 to 2016-17) period as against an average production of 28.93 million tonnes during 11th Plan (2007-08 to 2011-12) period.
- Subsidy on water carrying pipes increased from Rs. 25/- per mt to Rs.50/- per mt for HDPE pipes, Rs. 35/- per mt for PVC pipes and inclusion of HDPE laminated woven lay flat tubes with subsidy of Rs. 20/- mt from Kharif– 2016.
- Seed subsidy for certified seed distribution oilseeds was increased by more than 100%. (from Rs.1200/- to 2500/- per qtl. and from Rs. 2500/- to Rs. 5000/- per qtl. for hybrids and sesame from 2016-17).

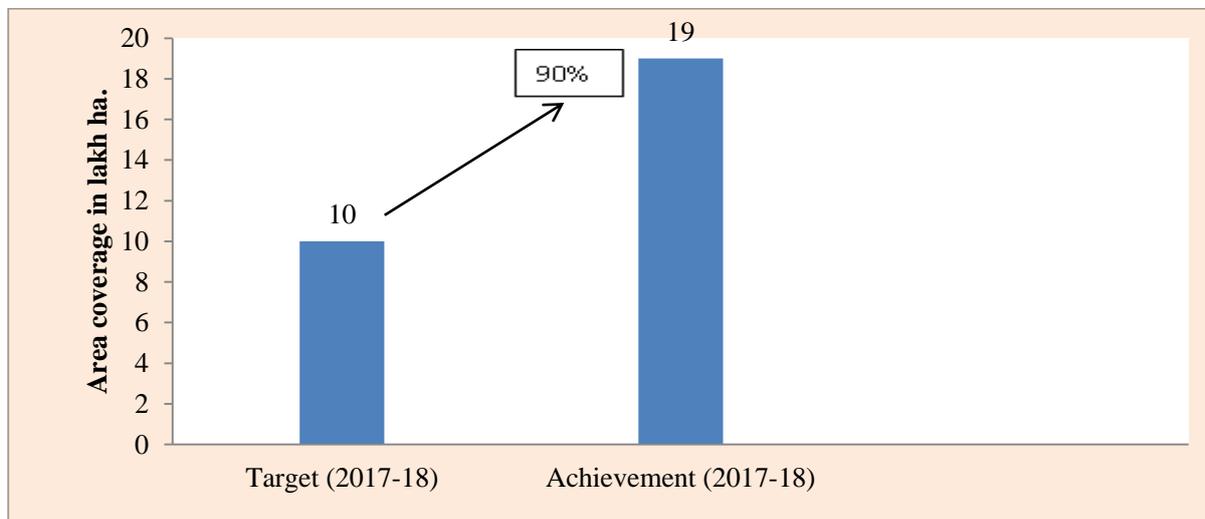


Distribution of oilseed Minikits of new varieties free of cost to the farmers



- Seed minikit of latest released/ pre-released varieties / hybrids are distributed free of cost to the farmers
- Central Seed producing agencies are supplying crop-wise minikits as per the indent given by the states.
- As a result of minikit distribution the variety and seed replacement rate of oilseed crops have been increased in many states.

New sub-scheme under RKVY launched in Rabi 2016 for promotion of oilseeds and pulses in Rice fallows of Eastern states



- Cultivation of pulses (lentil, moong bean, urd bean, lathyrus) and oilseeds (mustard, groundnut, linseed, sesame, safflower) under the residual moisture conditions of rice fallows to bring additional area
- Assam, Bihar, Chhattisgarh, Jharkhand, Odisha and West Bengal are under the scheme.
- Input kits comprising certified seeds, lime/ gypsum, micronutrients, bio-agent, bio-pesticides have been provided to the farmers.
- During next three years, 30 lakh ha. has been targeted to cover under rice fallow in Eastern states.

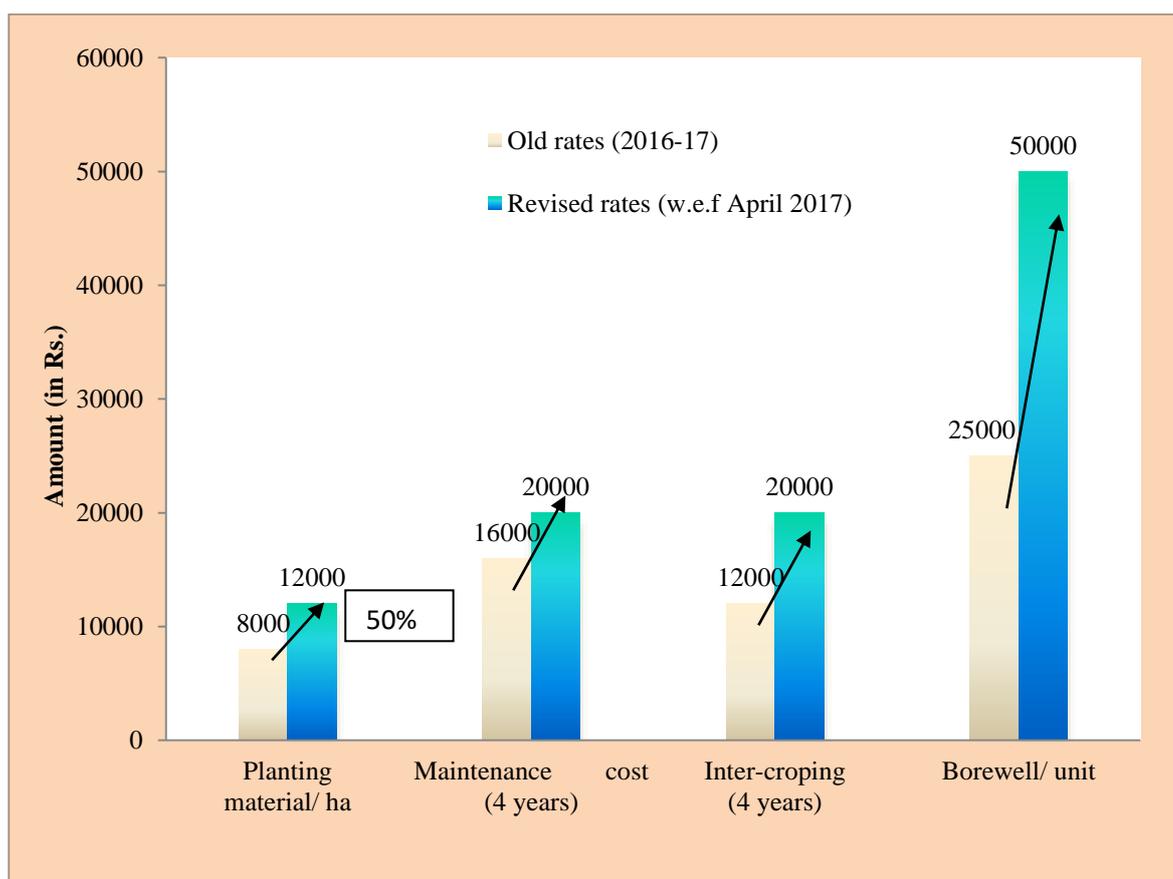
Promotion of oilpalm in the country

- NMOOP aims at bringing additional area of 1.25 lakh ha under Oil Palm with focus on productivity improvement of Fresh Fruit Bunches (FFBs).
- An additional area of 95654 ha has been covered under oil palm cultivation during 12th plan period. The total area under oil palm cultivation in India is **3.10 lakh ha as on 2017-18** The FFBs production during 2015-16 was 12.83 lakh MT with Crude Palm Oil (CPO) production of 2.17 lakh MT.
- Oil palm growers have been supported through Market Intervention Scheme (MIS) to assured FFBs prices as and when the international price of CPOs falls below \$ 800.

CABINET DECISION DATED 12TH APRIL 2017.

Decision 1: In order to encourage large scale plantation under Oil Palm cultivation assistance has been approved for undertaking plantation in more than 25 ha. area under Oil Palm.

Decision 2: Enhanced assistance for the components of Oil Palm such as planting material, maintenance cost, intercropping and Bore-well.



- Cabinet decision will encourage big farmers, farmers co-operative, farmers organization for large scale oil palm plantation.
- The increased subsidy will motivate small and marginal farmers to grow more oil palm.