

NATIONAL CONFERENCE ON AGRICULTURE (*KHARIF* CAMPAIGN-2022)

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KHARIF PROSPECTS AND STRATEGIES



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AREA AND PRODUCTION OF CROPS IN 2021-22 (2nd Adv. Est.)

Crops	Area (Million hectare)			Production (Million ton)		
	Kharif	Rabi	Total	Kharif	Rabi	Total
Rice	41.58	5.20	46.78	109.54	18.39	127.93
Wheat	-	30.95	30.95	-	111.32	111.32
Sorghum	1.48	2.38	3.86	1.58	2.73	4.31
Bajra	7.05	-	7.05	9.22	-	9.22
Maize	8.00	1.86	9.86	22.59	9.83	32.42
Ragi	1.13	-	1.13	1.67	-	1.67
Small millets	0.41	-	0.41	0.33	-	0.33
Barley	-	0.68	0.68	-	1.90	1.90
Total Coarse cereals cum Nutri Cereals	18.06	4.92	22.98	35.39	14.47	49.86
Total Pulses	14.03	16.34	30.37	8.61	18.34	26.95
Total food grains	73.67	57.41	131.08	153.54	162.52	316.06
Total Oil seeds	19.75	9.01	28.76	23.82	13.33	37.15

RAINFALL – RABI & SUMMER SEASON (mm)

METEOROLOGICAL SUBDIVISIONS	POST-MONSOON, 2021 (01.10.21 to 31.12.21)			WINTER - 2022 (01.01.22 to 28.02.22)			MARCH, 2022 ONWARD (01.03.22 to 06.04.22)		
	ACTUAL	NORMAL	% DEP.	ACTUAL	NORMAL	% DEP.	ACTUAL	NORMAL	% DEP.
EAST & NORTH EAST INDIA	186.3	166.7	12%	73.4	52.1	41%	85.9	85.0	1%
NORTH WEST INDIA	80.5	55.9	44%	108.3	78.9	37%	5.2	53.5	-90%
CENTRAL INDIA	106.4	76.0	40%	26.6	15.2	75%	1.4	10.2	-87%
SOUTH PENINSULA	444.6	277.1	60%	24.2	16.2	49%	15.6	19.5	-20%
COUNTRY AS A WHOLE	177.7	123.8	44%	58.7	40.8	44%	18.8	37.3	-50%

- Post monsoon rainfall : was (+) 44%
 - Rabi 2022 rainfall winter : was (+) 44%
- Rabi: Western disturbances rains coupled with cold wave condition benefitted Rabi crops (wheat, mustard and gram)
- Normal Forecast for Kharif - 2022

STATUS OF AREA SOWN FOR SUMMER CROP as on 08.04.2022

Sl. No.	Crops	Area Sown (LAKH HA)		Increase/ Decrease over last year
		2021-22	2020-21	
1	Rice	28.22	30.16	-1.94
2	Pulses	9.32	8.48	0.84
a	Greengram	6.12	6.38	-0.26
b	Blackgram	2.84	1.82	1.02
c	Other Pulses	0.36	0.28	0.08
3	Coarse Cereals	8.78	8.72	0.06
a	Jowar	0.17	0.08	0.09
b	Bajra	2.97	2.49	0.47
c	Ragi	0.22	0.17	0.05
d	Maize	5.42	5.98	-0.56
4	Oilseeds	9.45	9.11	0.33
a	Groundnut	4.83	5.20	-0.37
b	Sunflower	0.36	0.49	-0.14
c	Sesamum	3.62	3.34	0.28
d	Other Oilseeds	0.64	0.07	0.56
Total		55.76	56.47	-0.71

TENTATIVE REQUIREMENT & AVAILABILITY OF SEEDS FOR MAJOR CROPS

KHARIF-2022

Crops Group	Crop	Requirement (in Quintals)	Availability (in Quintals)	Surplus/Deficit (in Quintals)
1. Cereals	Paddy	7599868	8873767	1273899
	Maize	1065256	1061094	-4162
2. Nutri-Cereals	Bajra	234869	260447	25578
	Jowar	95577	108191	12614
	Millets	7590	8767	1177
3. Pulses	Arhar	269831	302295	32464
	Urd	227903	237105	9202
	Moong	196480	217806	21326
	Cowpea	27111	29044	1933
	Moth	25000	28668	3668
4. Oilseeds	Groundnut	2131597	2188249	56652
	Soybean	3721005	3502563	-218442
	Sunflower	12588	16071	3483
	Sesame	18909	20598	1689
	Castor	49165	52622	3457

*Based on tentative information provided by the states in ZSRM Kharif-2022, the deficiency shows will be met from Farm Saved Seed, NSC & Private Seed Companies as informed by States.

REQUIREMENT & SALES OF FERTILIZERS IN 2021 AND REQUIRMENT IN KHARIF -2022

(Lakh Tonnes)

Fertilizers	KHARIF: 2021		KHARIF: 2022
	Assessed requirement	Total sales	Assessed requirement
Urea	177.53*	154.02	179.01**
DAP	65.18	41.90	58.82
MOP	20.24	11.23	19.82
NPK	61.87	62.03	63.72
SSP	26.46	25.62	33.19

*Reserve Allocation- 2.85 LMT (Total Allocation- 180.38 LMT)

** Reserve Allocation – 0 LMT (Total Allocation – 179.01 LMT)

Use of Bio-fertilizers, Neem Coated urea, Use of Micro-nutrients

Source: INM & FMS, DAC, GOI

National Crop Production Targets for 2022-23

(In Million Tonnes)

Crop	Season		
	Kharif	Rabi	Total
Rice	112.00	18.50	130.50
Wheat		112.00	112.00
Maize	23.10	10.10	33.20
Barley		2.25	2.25
Total Coarse Cereals	23.10	12.35	35.45
Jowar	3.00	3.00	6.00
Bajra	11.30		11.30
Ragi	2.50		2.50
Small Millets	0.70		0.70
Total Nutri Cereals	17.50	3.00	20.50
Tur (Arhar)	4.55		4.55
Gram	13.50		13.50
Urad	2.70	1.00	3.70
Moong	2.50	1.50	4.00
Other Kharif Pulses	0.80		0.80
Other Rabi Pulses		3.00	3.00
Total Pulses	10.55	19.00	29.55
Total Foodgrains	163.15	164.85	328.00
Total Oilseed	26.89	14.45	41.34
Sugarcane	415.00		415.00
Cotton*	37.00		37.00
Jute**	10.00		10.00
Mesta**	0.50		0.50
Jute & Mesta**	10.50		10.50

* Production in Million bales of 170 kg for Cotton, ** Production in Million bales of 180 kg for Jute & Mesta.

Pulses Scenerio

In Million Tonnes

Pulses	Present Status	Target	Projections		
	2020-21	2021-22	2028-29	2029-30	2030-31
Demand	28.18	29.26	31.83	32.64	35.23
Production	25.72	26.96*	29.79	30.75	33.95
Import Requirement	2.46	2.30	2.04	1.89	1.28
Dependency on Import	9%	8%	6%	5.7%	3.6%

*2nd Advance Estimates

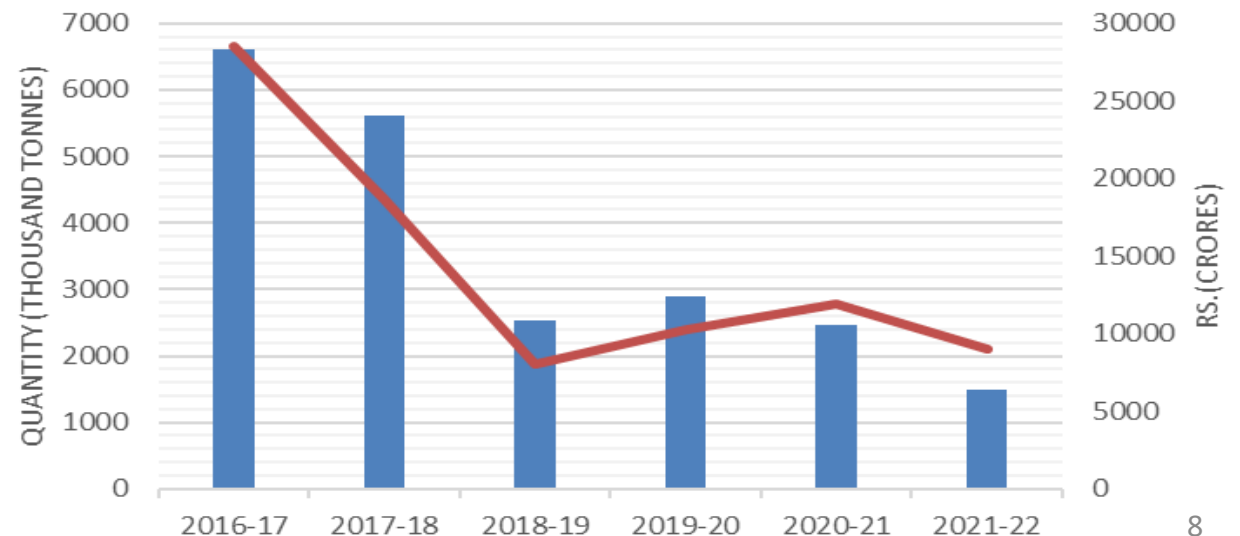
Source: Working Group recommendations on Final Projections, Niti Ayog

Dependency on import can easily be neutralized by little additional production of 1.5-2.0 million tonnes than the target

Import Substitution

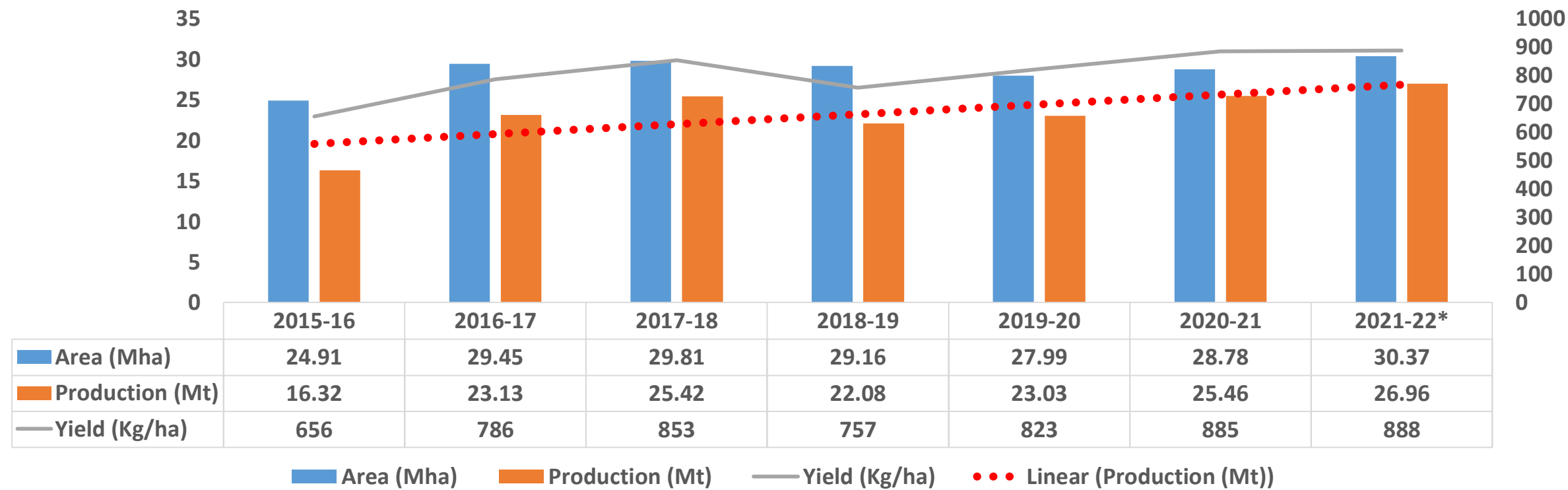
Rs. 28523.90 crore in 2016-17
to Rs.11937.59 crore from 6.6 Mt in 2016-17 to 2.46 Mt in 2020-21

Dependency on Import (2016-21)



Trends of area, production and yield of Pulses in India (2015-16 to 2021-22)

* 2nd Advance Estimates; Source: Ministry of Agriculture & Farmers Welfare, Govt. of India



Self-sufficiency in Pulses: a Saga of Success

Year	2015-16	2017-18	Increase in 2017-18 over 2015-16	
			Net increase	%
Production (Mt)	16.32	25.42	+ 9.10	55.8
Area (Mha)	24.91	29.81	+ 4.90	19.7
Yield (Kg/ha)	655	853	+ 198	30.2

Sustaining Self-sufficiency in Pulses

Closing the yield gaps

(Presently yield gaps ranges from 17.1% in Lentil to 196.8% in Mothbean)

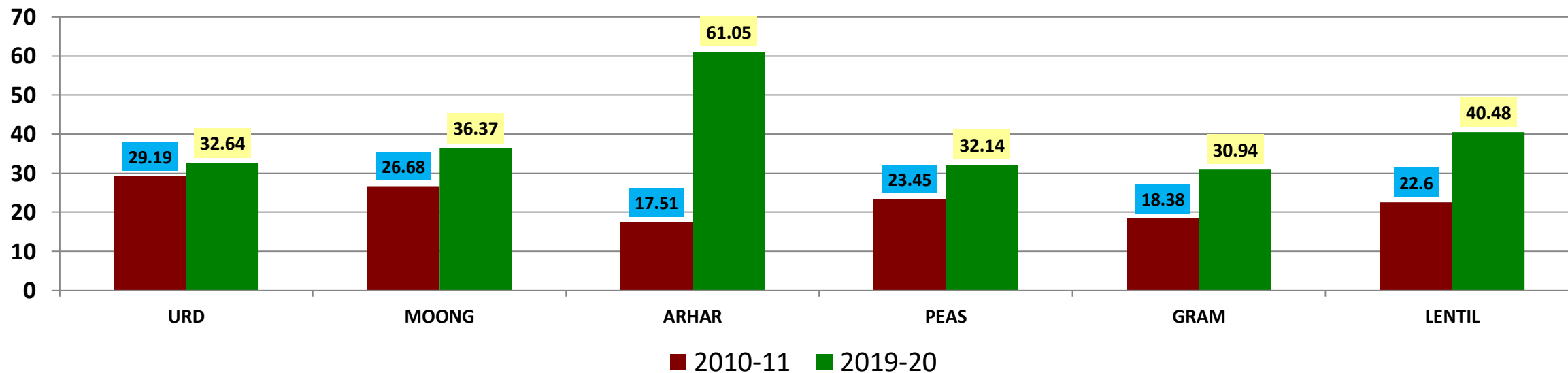
Area expansion

(Additional potential area: 6.2 million ha)

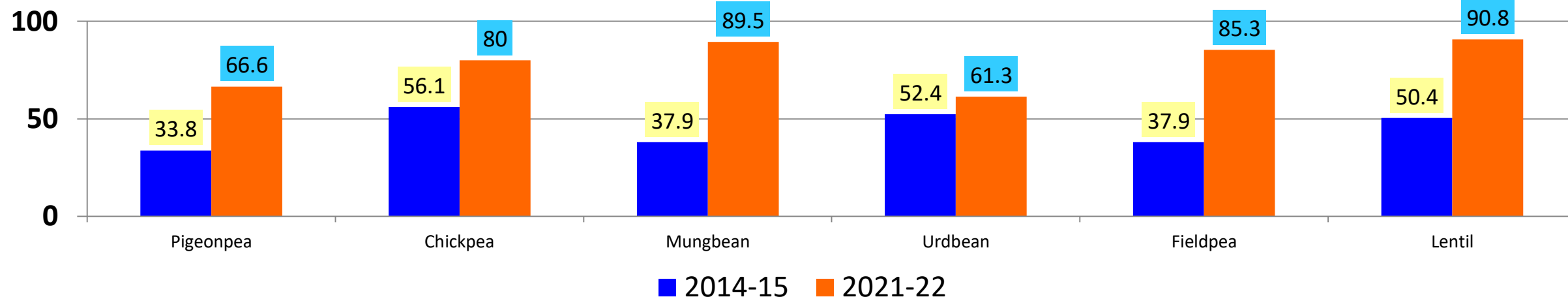
Productivity enhancement

(From 817 kg/ha to 1000 kg/ha)

SRR of Pulse Crops



VRR of Pulse Crops



Edible Oils: Demand-Supply Gap Widening

The gap between demand and supply for edible oils has widened in India over the years

- *as the per capita consumption of edible oils has increased from 15.8 kg/year in 2012-13 to 18.8 kg/year in 2019-20*
- *and there has been 2.48% annual growth in the per capita consumption*

Increasing productivity and acreage under oilseeds are the two pronged approach along with the strategies/action plans, similar to that of pulses, for marching towards the self -sufficiency in edible oils.

Edible Oil Sector



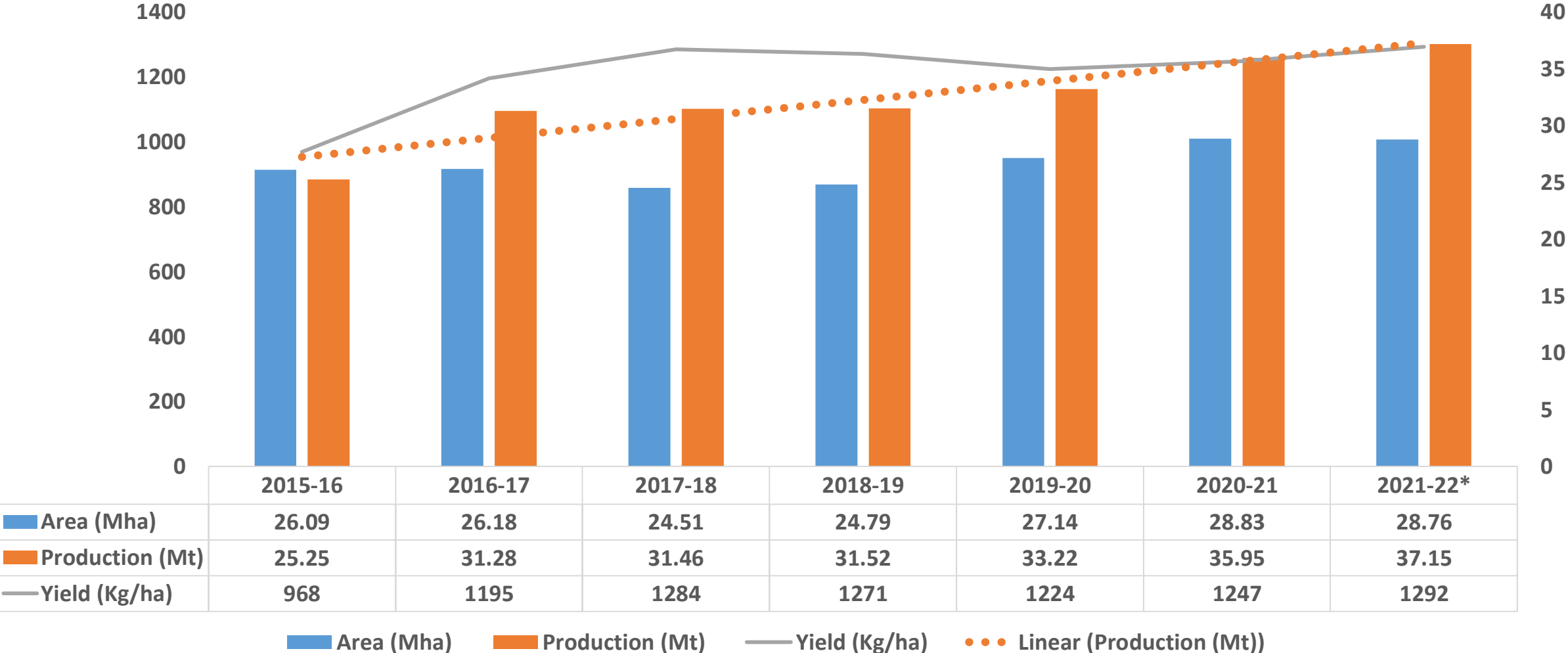
Year	Edible oil for available for consumption (MT)	Domestic Production (MT)	Imports (MT)	Value of import (Rs. in crore)	Dependency on imports (%)	Per capita Consumption (kg/yr)
1986-87	5.34	3.87	1.47	700	28.0	6.2
1994-95	7.54	7.19	0.35	300	5.0	7.3
2014-15	21.36	8.63	12.73	64,894	59.6	18.3
2019-20	25.06	10.60	14.46	68,576	57.7	18.7
2020-21	25.82	12.47	13.35	79,190	54.9	18.2

Source: Department of Sugar & Vegetable Oils; DG, CI&S, Dept. of Commerce, Kolkata

ICMR recommendation i.e. 30 g/person /day : 12 kg/person/annum

Total import of edible oils: 13.35 million tons
(Palm oil (56%), Soybean oil (27%), Sunflower oil (16%), Others (1%))

Trends of area, production and yield of Oilseeds in India (2015-16 to 2021-22)



* 2nd Advance Estimates; Source: Ministry of Agriculture & Farmers Welfare, Govt of India

Reducing Yield Gap in Edible Oilseeds

Crop	Existing yield gap (%)	Target for 2025-26 for minimizing yield gap (%) up to
Soybean	50	20
Rapeseed-Mustard	27	15
Groundnut	40	15
Sesame	22	10
Sunflower	160	20
Safflower	81	45
Niger	40	15
Average	60	20

- The average yield gap in edible oilseeds is about 60%.
- Reducing the yield gap to 20% in the next five years may lead to 13-14 Mt additional production of edible oilseeds (~ **3-4 Mt edible oils**) without bringing any additional area under them.

State-wise APY of Sunflower and gap over the period

Area (lakh ha), Production (lakh tonnes) & Yield (kg/ha)

States	1993-94			2020-21*			APY gap & % between 2020-21 and 1993-94		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
Karnataka	14.69	4.75	323	1.2	1.08	898	-13.49 (92%)	-3.67 (77%)	575
A.P.	3.9	2.17	556	0.12	0.08	692	-3.78 (97%)	-2.09 (96%)	136
Maharashtra	5.72	3.54	619	0.26	0.12	466	-5.46 (95%)	-3.42 (97%)	-153
Haryana	0.4	0.65	1625	0.11	0.25	2004	-0.29 (73%)	-0.40 (62%)	379
Punjab	0.85	1.46	1718	0.02	0.04	1870	-0.83(98%)	-1.42 (97%)	152
T.N.	0.4	0.33	825	0.06	0.03	545	-0.34 (85%)	-0.30 (91%)	-280
U.P.	0.36	0.43	1194	0.04	0.05	1372	-0.32 (89%)	-0.38 (88%)	178
Other	0.36	0.15	417	0.45	0.63	1400	0.16 (44%)	0.52 (347%)	983
All India	26.68	13.48	505	2.26	2.28	1011	-24.42 (92%)	-11.20 (83%)	506

** As per final estimate of DES*

Strategy for Sunflower

Area expansion: Targeting area expansion in traditional and non-traditional areas with quality seed supply.

Productivity improvement: Achieving higher productivity through technology (BMPs) adoption and reducing yield gap.

Profitability improvement: Integrating secondary agriculture and value addition opportunities through apiary, oil extraction, thalamus utilization, mechanization, etc.

Capacity Development: Training farmers, extension agencies and technical manpower on full lifecycle supply and value chain opportunity and entrepreneurship development.

Cotton – State specific challenges and interventions

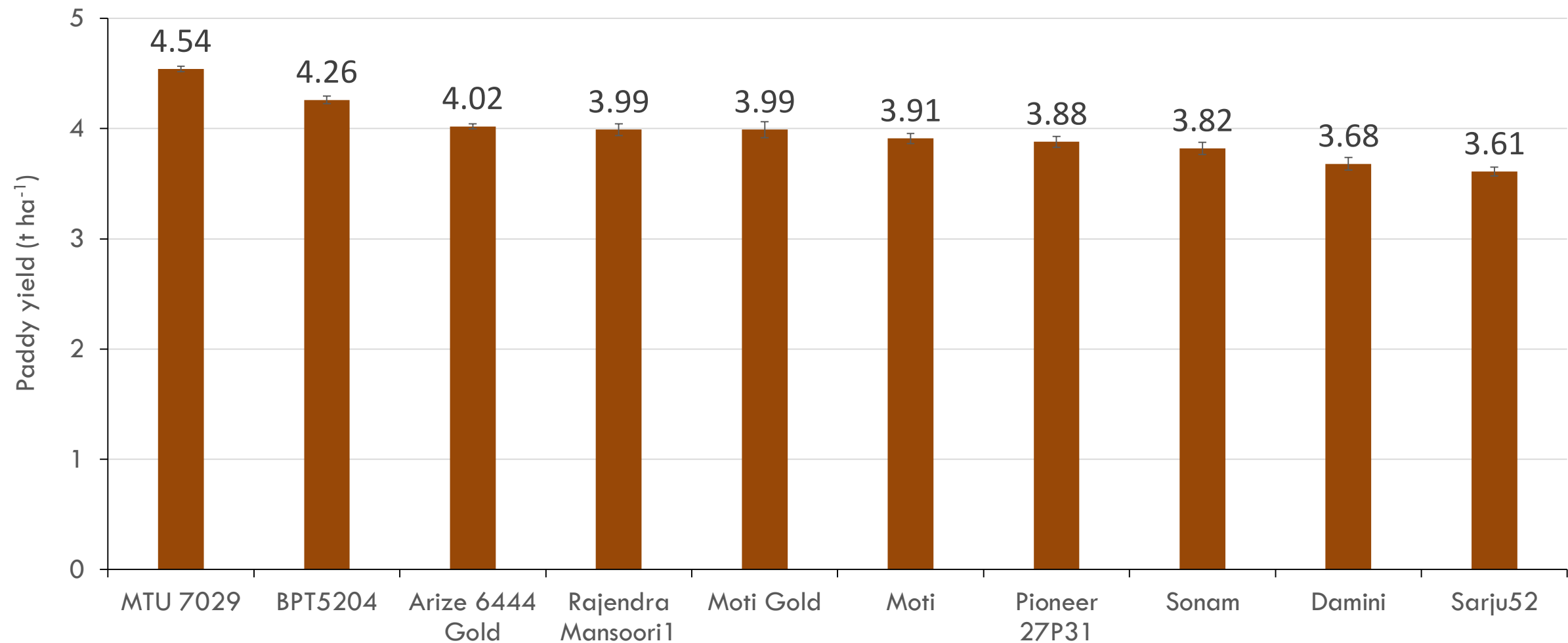
State	Area	Production	Yield	Challenges	Interventions
Punjab Haryana Rajasthan	17.5 (13.4%)	13.4 (17.1%)	585	• Whitefly • Leaf curl Virus • Pink boll worm (PBW) • Soil crusting	• Use of virus tolerant hybrids • Monitoring/ mating disruption technique for PBW near ginneries/ oil extraction units • ETL based neem & pesticide Application (pheromone traps 2/ac, ETL 10% flower damage or boll damage)
Gujarat	23.9 (18.4%)	81.7 (23.1%)	577	Pink boll worm	• Use of early maturing hybrids • PBW management • Promotion of Herbaceum cotton in north Gujarat
MP	6.0 (4.7%)	14.9 (4.3%)	416	Sustain the organic cotton value chain	• Certification & quality input supply • Promotion of ELS cotton
Maharashtra	44.1 (33.8%)	80.9 (23.0%)	<u>312</u>	• Boll rot • Pink bollworm • Low productivity in rainfed shallow soils • Poor soil health	• High density planting system (compact Bt varieties/hybrids) • Boll rot management (between 60- 90 days, prophylactic) • IPM/IRM of Jassid & PBW • Promotion of long linted desi cotton varieties
APY figures are average of three years (2019-20, 20- 21, 21-22), %share in total, Area in lakh ha, Production in lakh bales and Yield in Kglint/ha					

Cotton – State specific challenges and interventions

State	Area	Production	Yield	Challenges	Interventions
Telangana	21.8 (16.7%)	64 (18.2%)	500	- Low productivity in red soils - Thrips (dry spells) & boll rot (excess rains) - Pink bollworm	- High Density planting system in shallow to medium soils - Crop window & ETL based sprays for boll rot & PBW - Timely sowing and crop termination
Andhra Pradesh	6.0 (4.5%)	19.1 (5.4%)	542	- Late season rains/cyclones - Sucking pests, TSV disease - Pink bollworm	- HDPS in rainfed shallow soils, ICM in heavy soils - IDM boll rot, leaf spots and IRM for PBW
Tamil Nadu	1.3 (1.0%)	3.2 (0.9%)	400	- Stem weevil, tea mosquito bug, Thrips - Low productivity of ELS cotton	- ETL based sucking pest management - Mulch cum drip fertigation technique for ELS cotton
Karnataka	7.8 (6.0%)	21.6 (6.2%)	473	- Mirid bug, PBW - Leaf reddening	- Sucking pest management - Nutrient management - Mating disruption for PBW
Odisha	1.8 (1.4%)	6.0 (1.7%)	570	Non-Bt seeds	Quality seed production

APY figures are average of three years (2019-20, 20-21, 21-22), %share in total, **Area** in lakh ha, **Production** in lakh bales and **Yield** in Kg lint/ha

Rice: Performance of major 10 Varieties (75% HHs) in Bihar and Eastern Uttar Pradesh



LET US STRATEGISE ACCORDINGLY

- Timely arrangement of inputs
- Mobilizing extension staff for field deployment
- Implementation & monitoring
- Cluster approach for crop productivity enhancement
- Cropping system centric interventions : Focus on Pulse, Oil seeds, Nutricereals
- Utilization of rice fallow, intercropping, rainfed areas, summer season
- Increasing Seed Replacement Rate and Varietal Replacement
- Increasing water and nutrient use efficiency
- Large scale adoption of improved technologies



THANK YOU