

INDIAN SUGAR & ETHANOL SECTOR: STATUS & POLICY INTERVENTIONS

Indian Sugar Mills Association



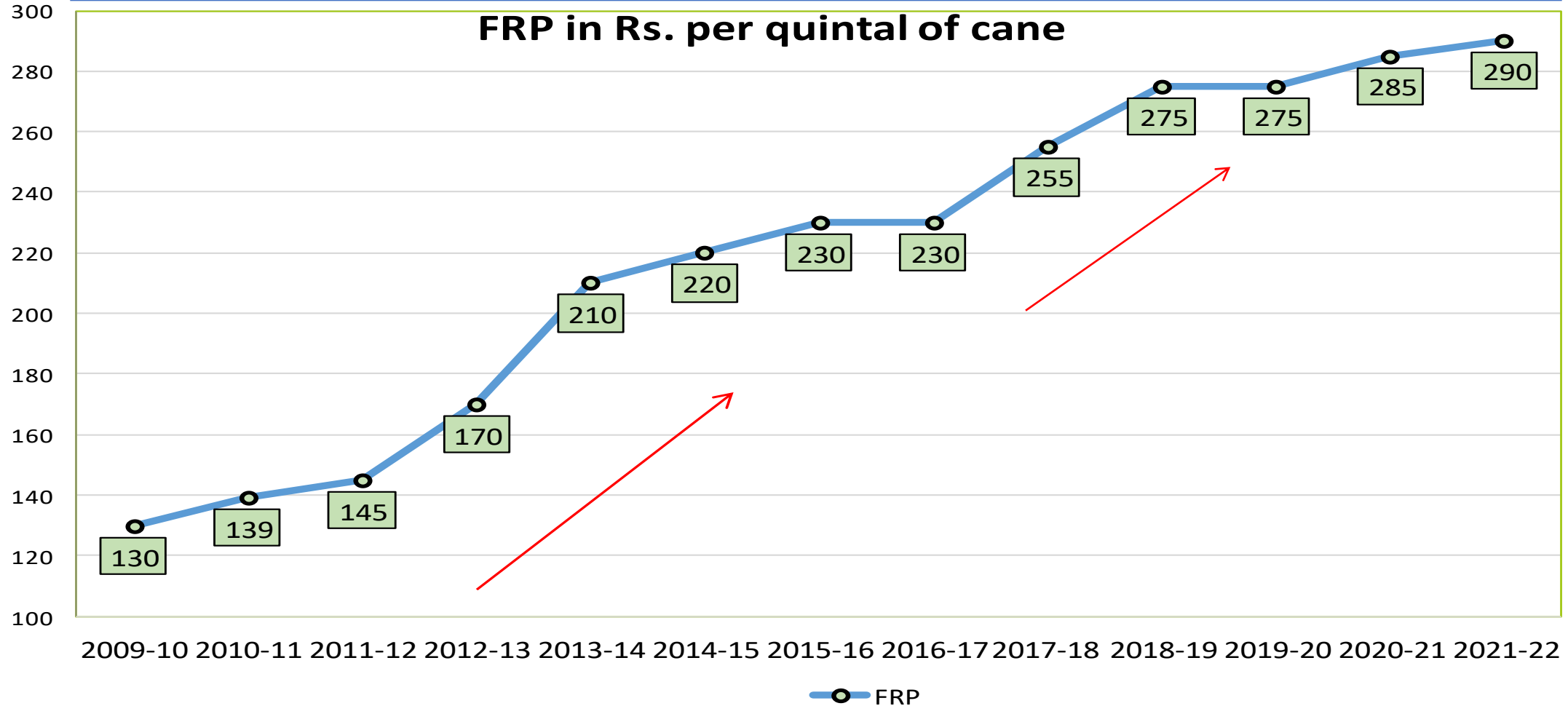
Flow of presentation

- ❖ Sugarcane pricing
- ❖ Surplus sugar and its problems
- ❖ To address the problem of plenty
- ❖ Advantages of ethanol
- ❖ Roadmap to achieving 20% ethanol blending by 2025
- ❖ Augmentation of ethanol capacities and financing thereof
- ❖ Challenges and solutions in achieving 20% blending

Sugarcane is the most attractive crop

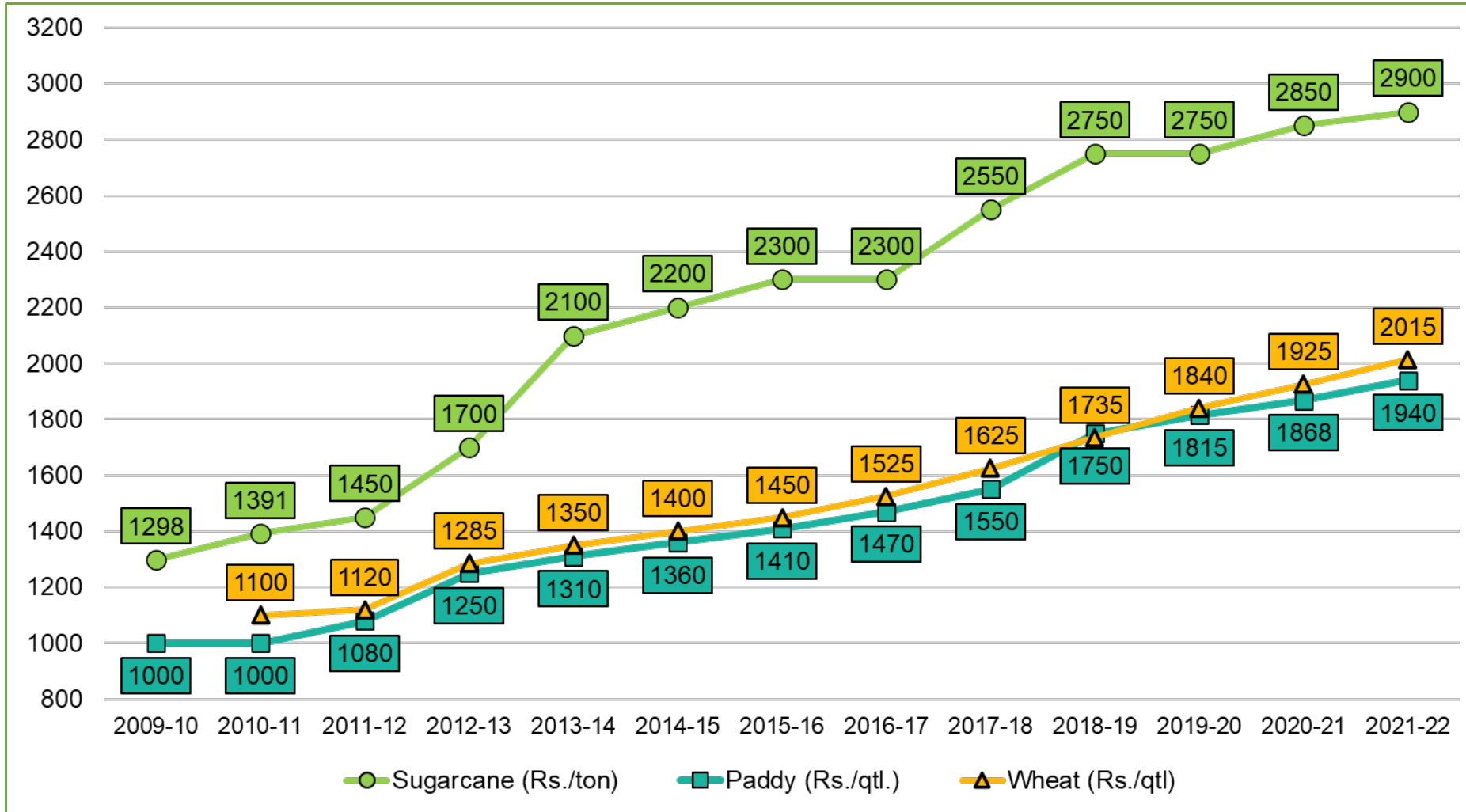
1. **Sturdy crop**: Can withstand weather fluctuations better than others
2. **Better remuneration**: Farmers get 50-60% higher returns from sugarcane as compared to any competing crop
3. **Assured buyer**: Each farmer is attached to a sugar mill. The mill can't close till it crushes all sugarcane grown in its area.
4. **Assured price**: Farmer gets full cane price fixed by Central or State Govt. even if late, which is not the case for other crops
5. **No middlemen**: Cane bought directly and payment made directly into bank accounts of farmers

FRP of sugarcane more than doubled in 12 years



- Two step increases in FRP
- Basic recovery rate however increased from 9.5% to 10% from 2018-19 SS

Revenue from sugarcane higher than competing crops



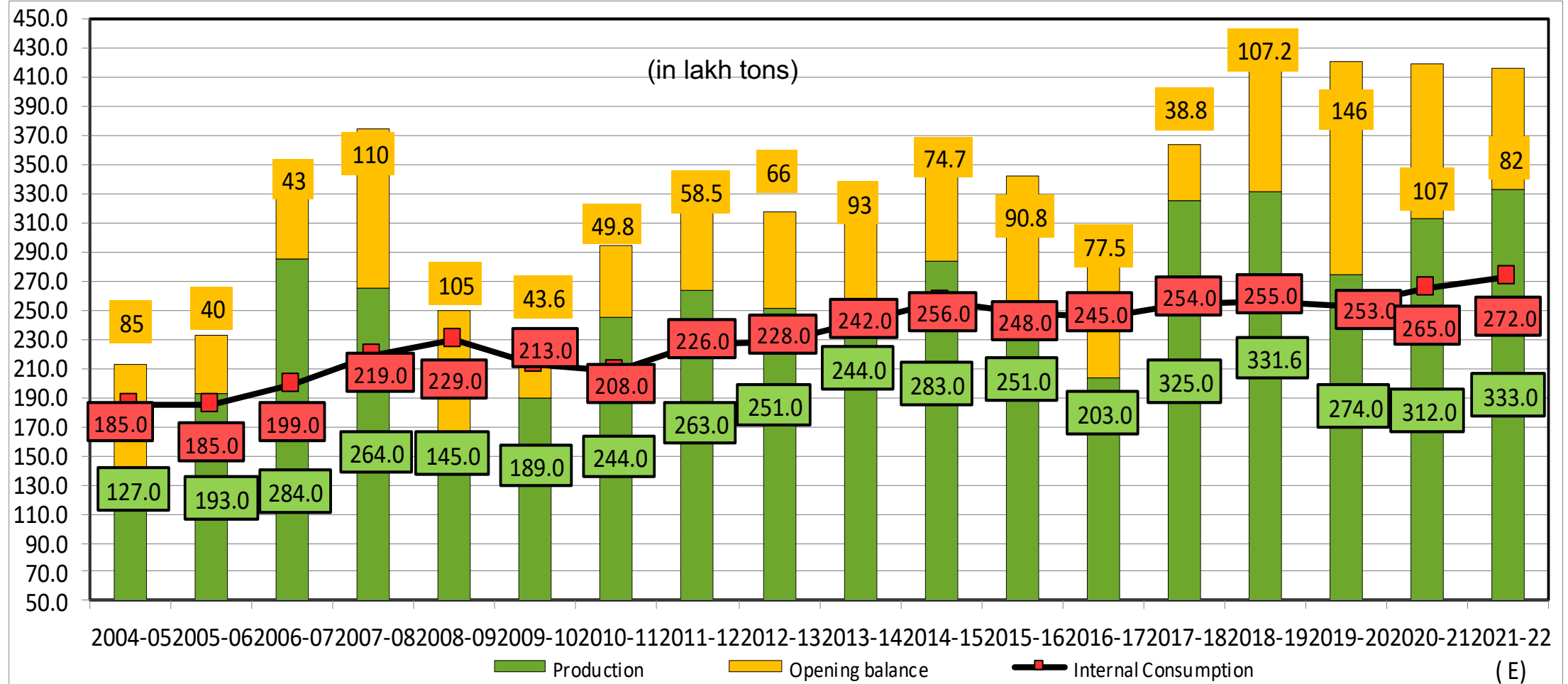
Relative returns: sugarcane outcompeting others

Crops	Relative Gross Returns over A2+FL with respect to sugarcane		
	2021-22	2020-21	2019-20
Sugarcane	100	100	100
Cotton + Wheat	45	50	50
Paddy + Wheat	51	47	49
Paddy + Paddy	39	31	36
Soybean + Wheat	34	37	34
Soybean + Gram	20	28	29

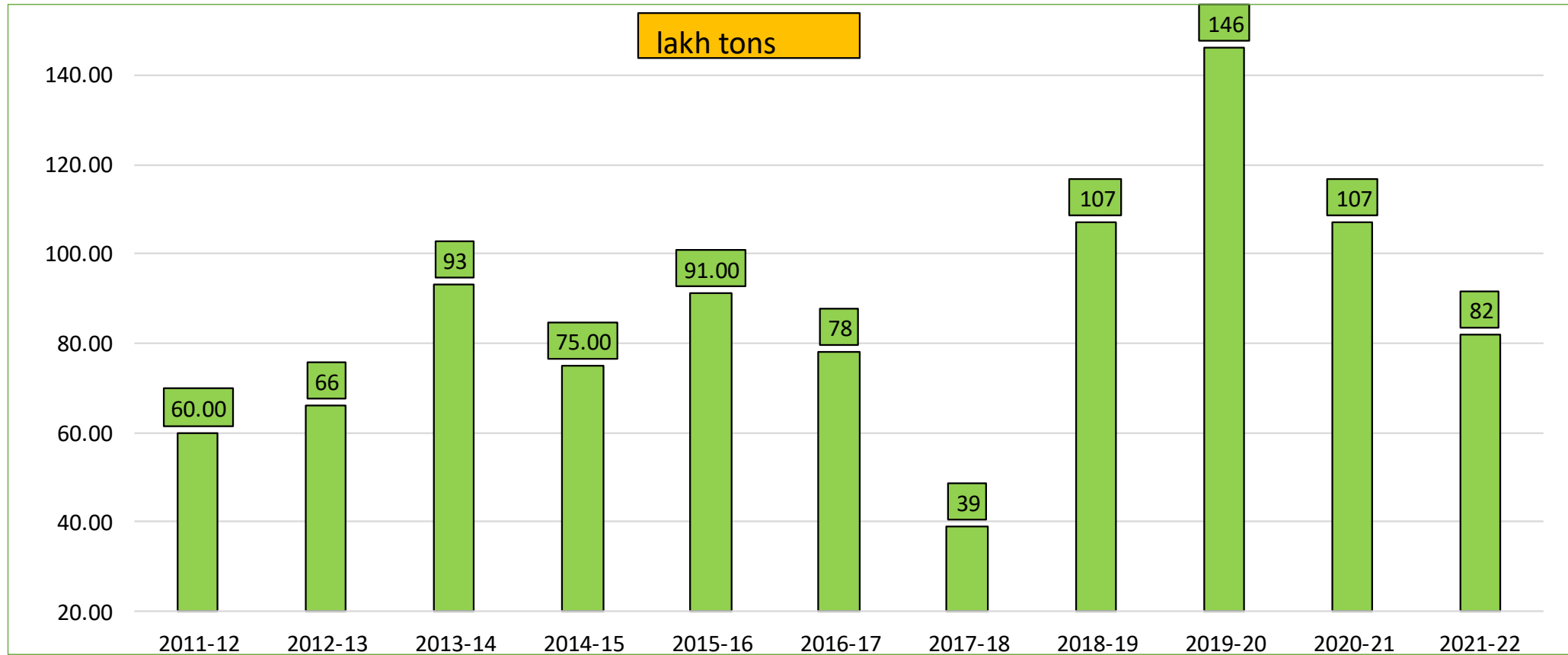
Source: CACP report for 2019-20,2020-21 & 2021-22

- Returns from sugarcane continues to be very high as compared to other crops
- Problem of surplus cane & sugar can be addressed by correcting this distortion

Indian sugar production, consumption and stocks



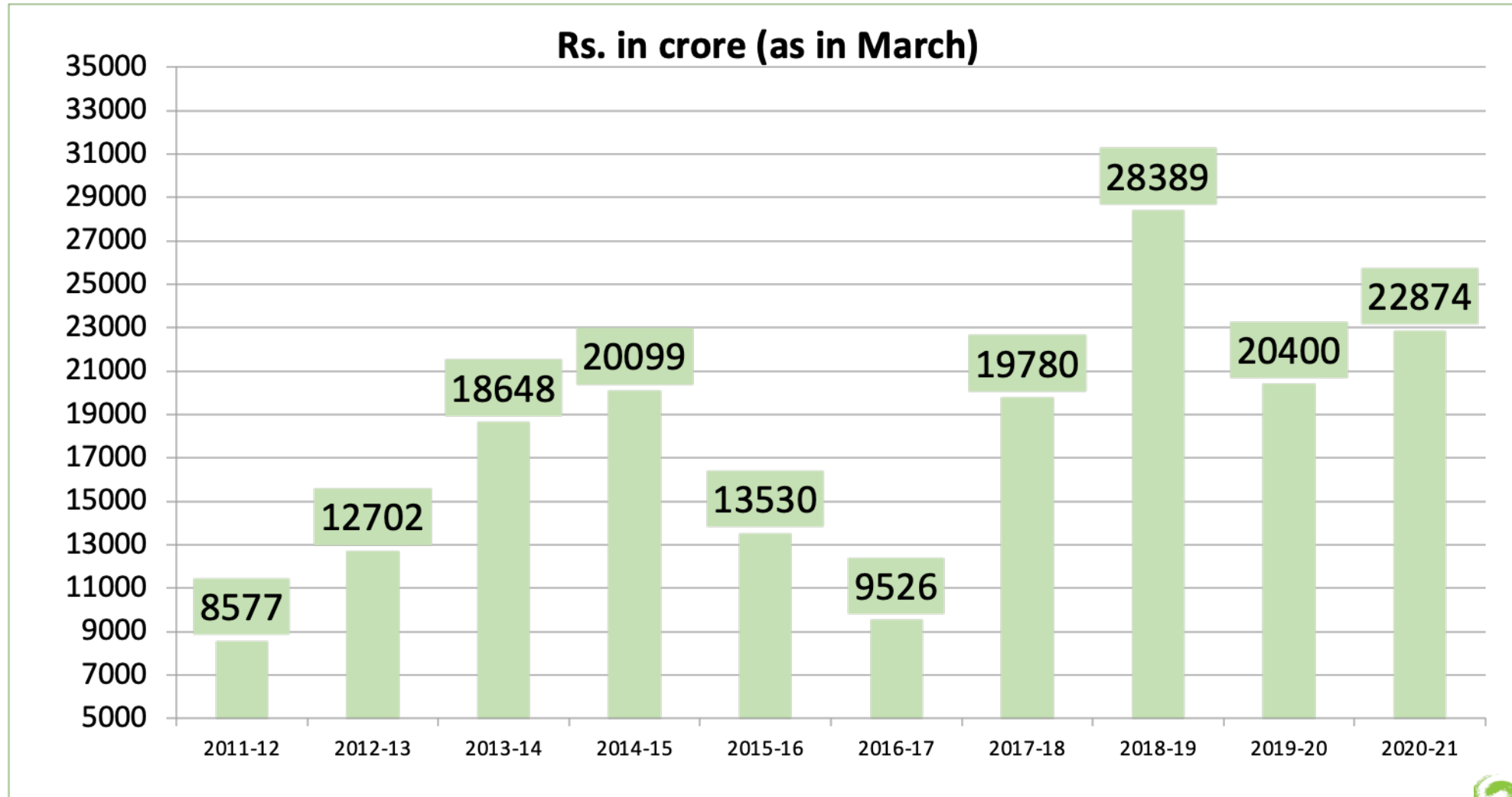
Opening Balance at start of the sugar season



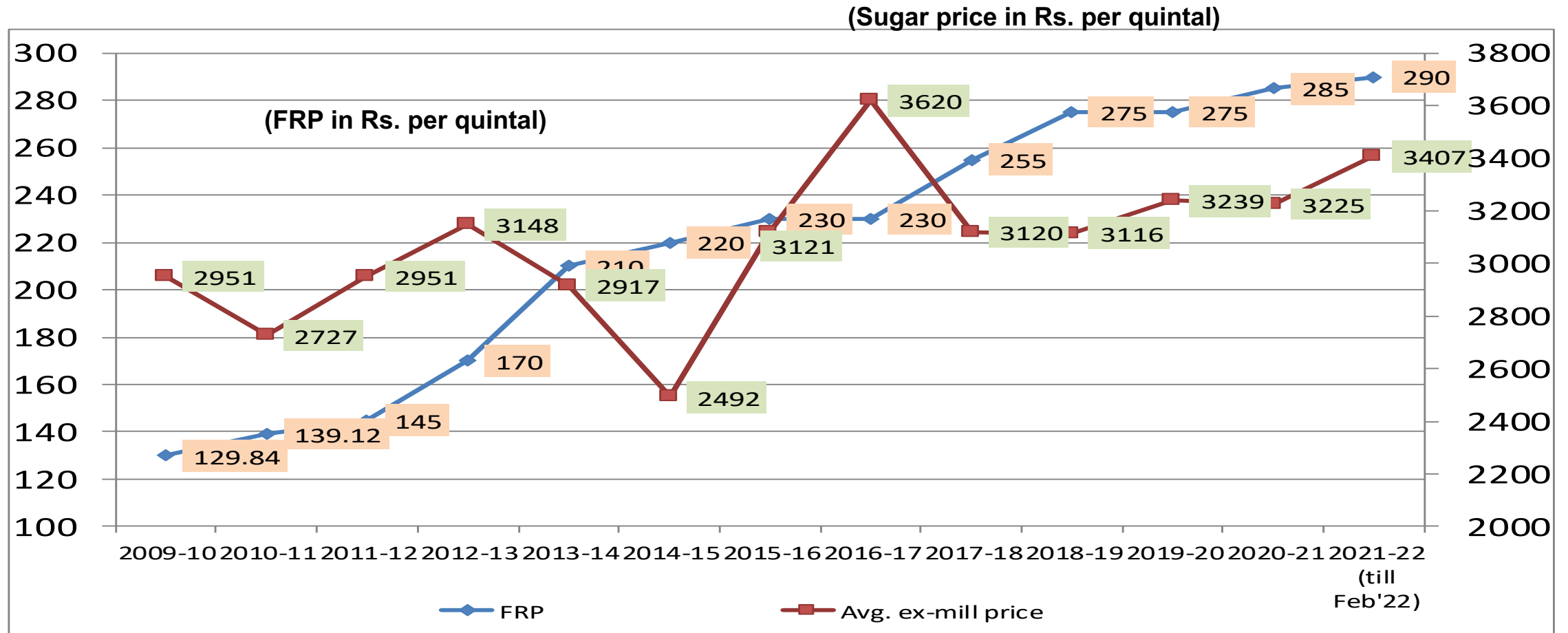
Normative opening balance should be around 55 lakh tons

Huge funds blocked in sugar stocks

Blocked funds result in high cane price arrears

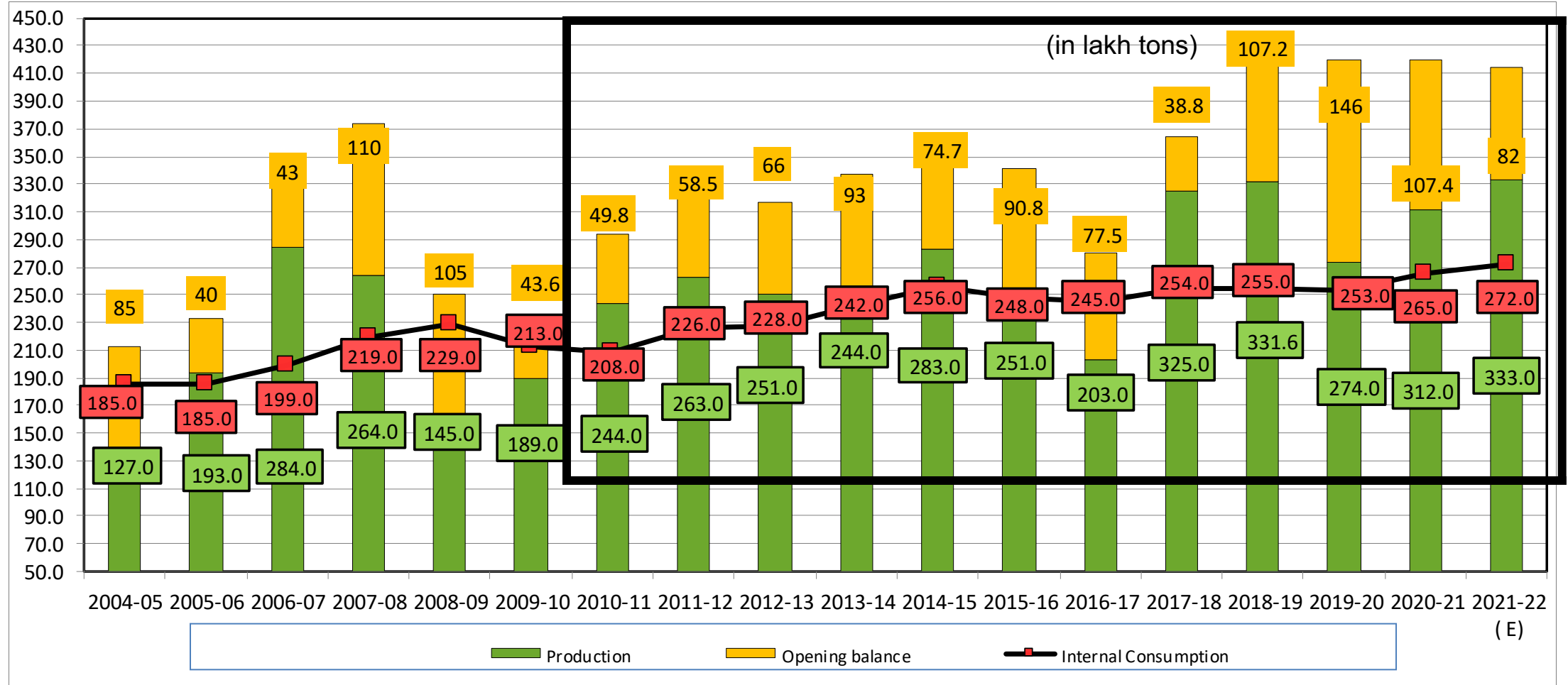


Ex-mill sugar price needs to improve to Rs.38 per kilo



- To be able to pay FRP, ex-mill sugar price should cover cost of production
- For example, cane price increase in UP by Rs.25/- quintal has increased cost of sugar by of Rs.2.50 / kilo
- Current cost of production of sugar is around Rs.37-38 per kilo

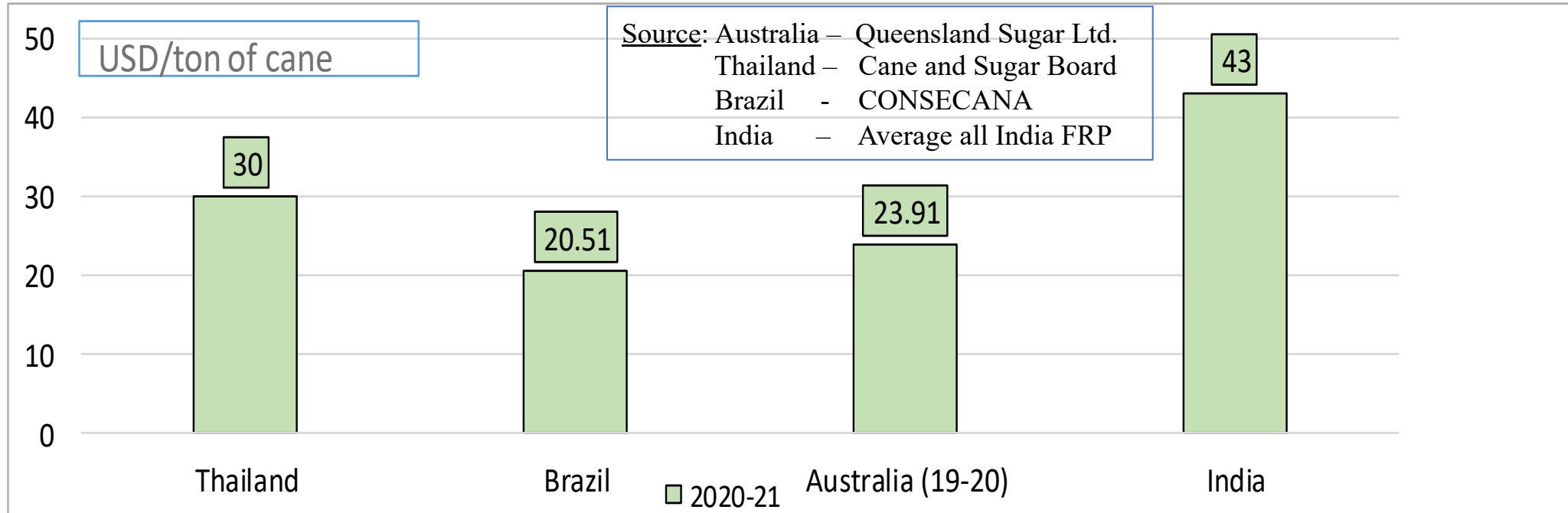
Surplus sugar since 2010-11 continuously



Find solution to the problem of surplus sugarcane and sugar

1. Rationalise sugarcane pricing policy
2. Export the surplus sugar
3. Divert surplus cane to ethanol

Amongst large producers, India pays the highest cane price

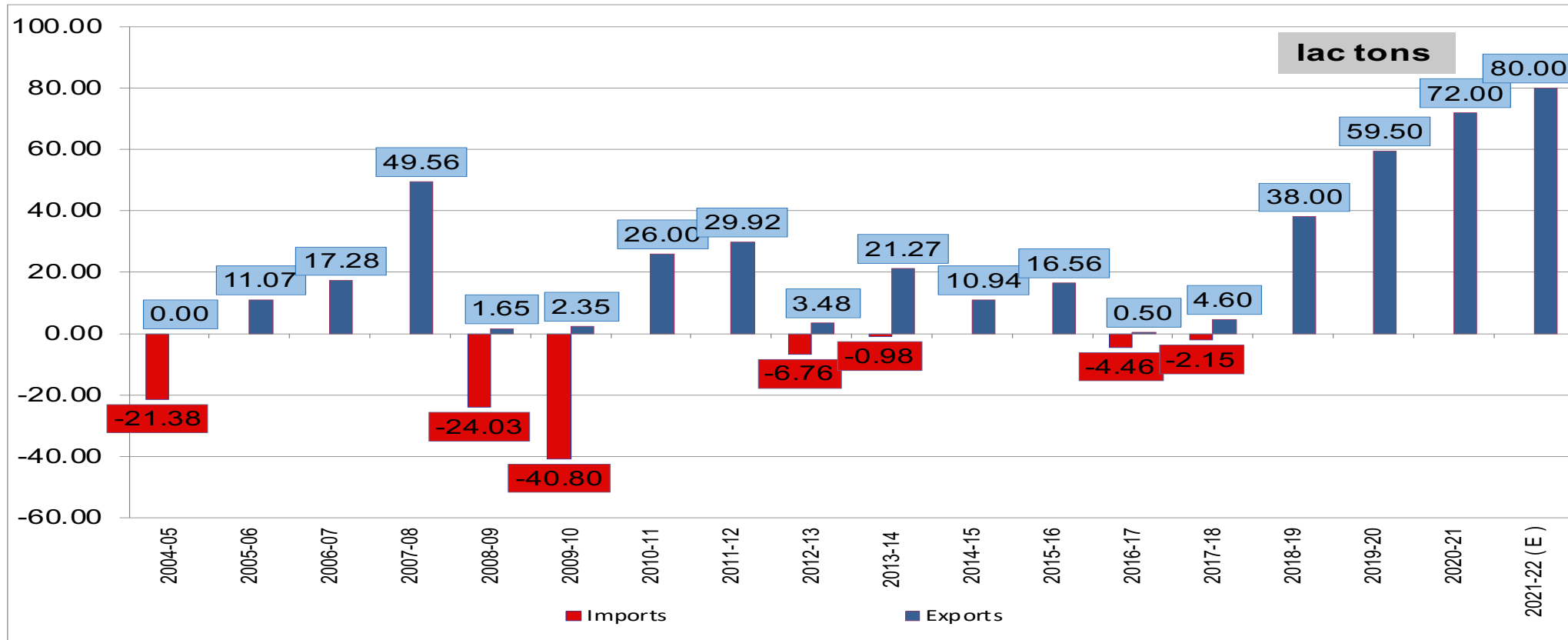


- If India is a structural surplus sugar producer, it needs to export regularly
- Such high cane prices make Indian sugar uncompetitive, and always dependent on Govt. subsidies on exports
- With export subsidies not possible after 2023 (as per WTO), Indian cane pricing policy needs reforms urgently

Rationalisation of cane pricing policy

- In other sugar producing nations:
 - Cane price automatically gets determined as per formula as a percentage of revenue from sugar and/or by-products
 - It varies in the range of 60-66%
- **If India has to export sugar, it needs to be competitive and adopt similar systems/ practice**
 - Rangarajan Committee, CACP and Niti Ayog have recommended a formula called Revenue Sharing Formula (RSF)
 - Along with creation of a Fund (PSF) to pay difference, if any, to farmers
 - Sugar mills to pay cane price at 70% of revenue from sugar and primary by-products or at 75% of revenue from sugar alone (giving 5% weightage to by-products), and if there is still a gap with FRP, the same to be filled up from the Fund

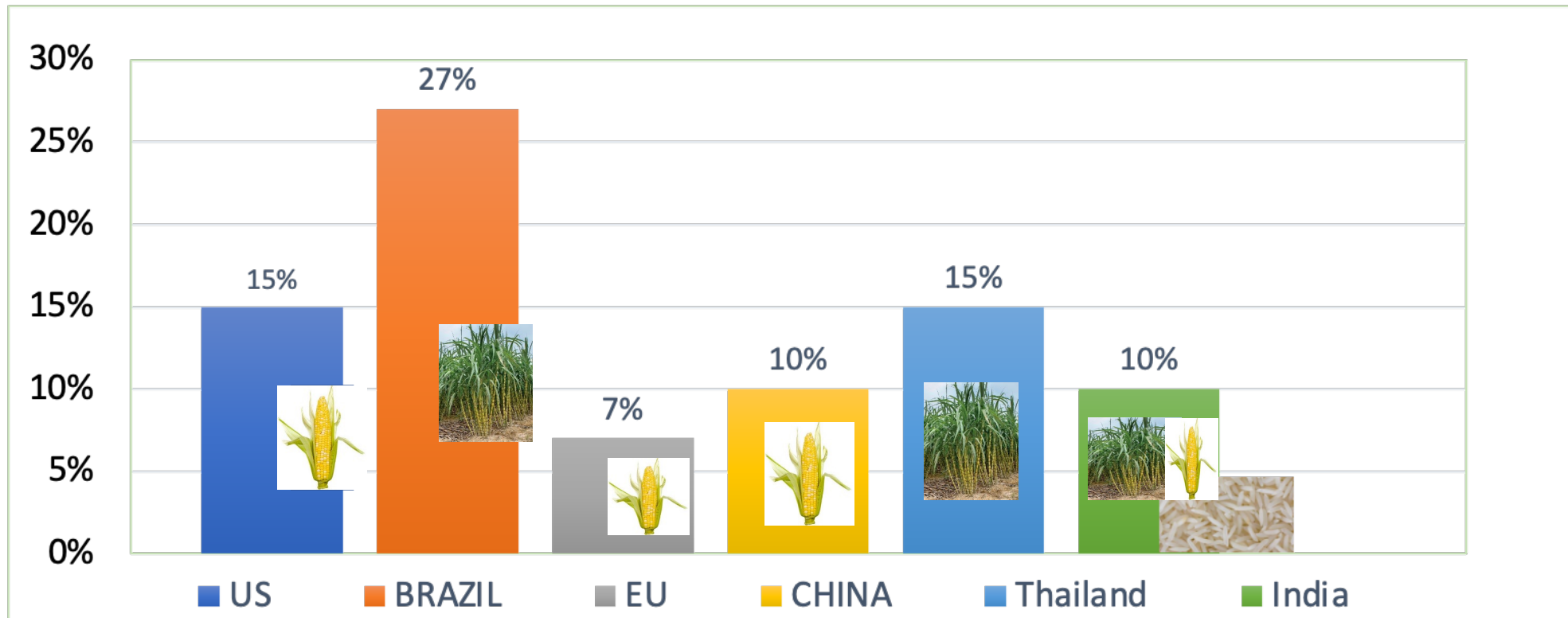
Sugar trade from and to India



- Sugar exports has been possible only with Government subsidies
- However, with world prices good (thanks to poor Brazil crop), India able to export without subsidy this year
- Export subsidies allowed by WTO only upto Dec 2023

ETHANOL HAS MANY ADVANTAGES

Ethanol Blending Mandate in Other Countries



- US, Brazil and Thailand have flexi-fuel vehicles
- **In Brazil, “Petrol : Ethanol” ratio is “53:47”. In some States the ratio is even 35:65**

Post 2014: Stable & encouraging policies

- Fixed ethanol procurement pricing reintroduced in 2014
- GST on ethanol reduced from 18% to 5% from July 2018
- New Biofuel Policy, 2018: Allows cane juice, B-molasses, maize, surplus/damaged foodgrains etc.
The Policy targets of 10% blending by 2022 and 20% by 2030 (*preponed by PM to 2025*)
- Interest subvention scheme for cane & molasses distilleries in 2018
- Ethanol pricing formula in 2018 linking ethanol price to feedstock, and not crude oil price
- Multiple ethanol prices, based to raw material price, started in 2018
- Amended IDR Act, 1951, to stop State control on ethanol movement/taxes
 - Most States removed controls on ethanol movement/levies

Multiple benefits from higher ethanol use

INCOME OF FARMERS:

- Timely payment of remunerative price to cane, corn & paddy farmers.
- Addresses surplus grain problem

DOMESTIC SUGAR INDUSTRY:

- Diversion of 6 million tons of surplus sugar into ethanol.
- Improves liquidity & Checks fall in sugar price.
- Product diversification.

IMPROVES AIR QUALITY

**Burns fuel better
Reduces pollution**

NEW INVESTMENTS & JOB CREATION

- New industries in rural areas.
- Job creation in villages.
- Less migration

“ATMANIRBHAR” BHARAT: REDUCES OIL IMPORT BILL

- Replaces Petrol with domestically produced ethanol.
- Saves foreign exchange.

E10* and E20* fuel improves Air Quality

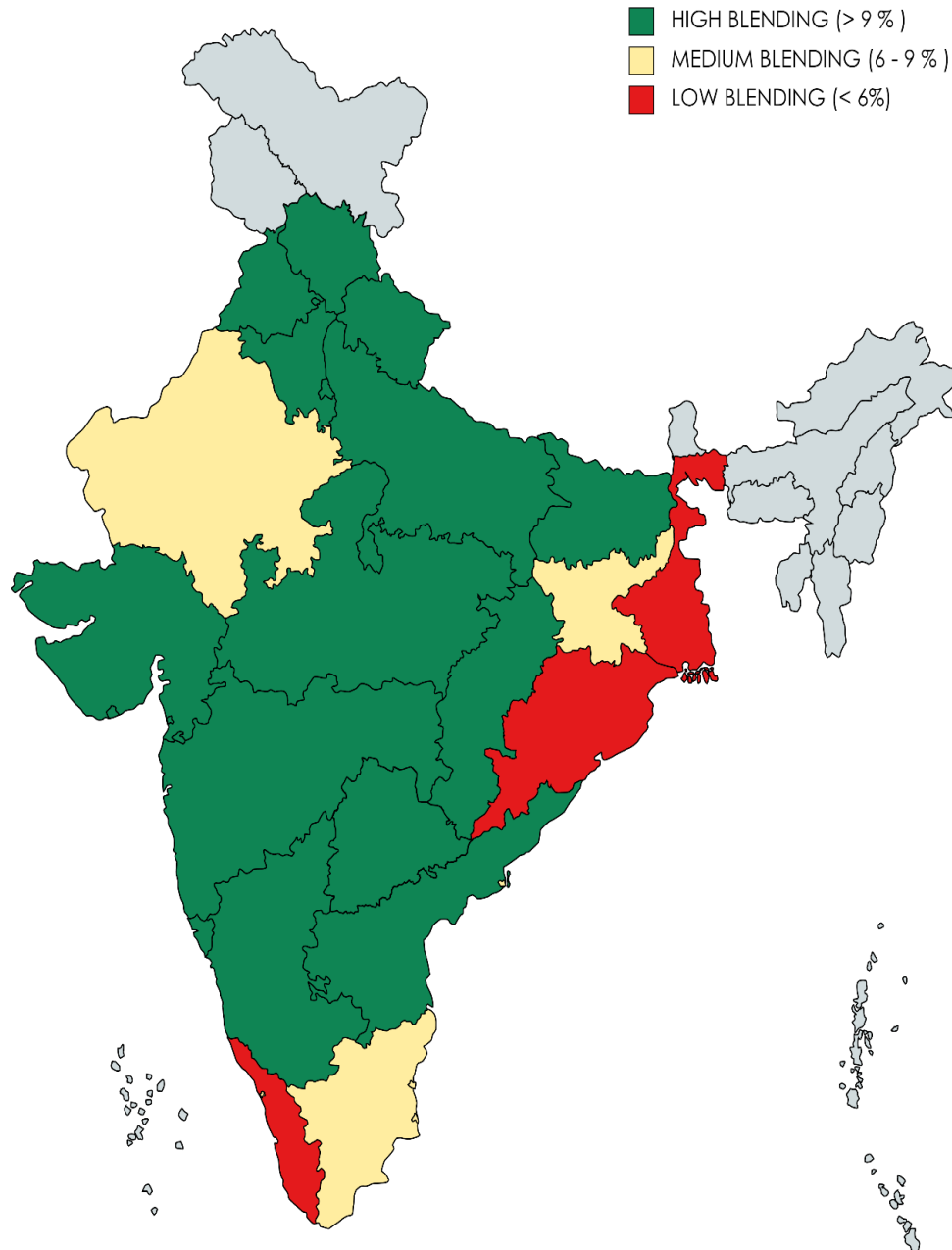
Emission reduction potential of ethanol-petrol blends

Emissions	Petrol	Two-wheelers		Four-wheelers	
		E10	E20	E10	E20
Carbon Monoxide	Baseline	20% lower	50% lower	20% lower	30% lower
Hydrocarbons	Baseline	20% lower	20% lower	20% lower	20% lower
Oxides of nitrogen	Baseline	No significant trend	10% higher	No significant trend	same

*E10 = (90% Petrol + 10% Ethanol)

*E20 = (80% Petrol + 20% Ethanol)

Source: Niti Ayog report March 2021



- UP, Maharashtra & Karnataka contribute for 75-80% of sugarcane of the country
- Maize and rice grown in most of the other States
- Some States like Kerala, Rajasthan, J&K and NE may not have enough surplus grains and/or water
- Not many investors interested in ethanol projects in States like -TN, Telengana, AP, J&K and NE
- Several States have announced attractive ethanol production promotion policies or industrial policies to encourage investments in ethanol plants

Diversion of sugar equivalent into ethanol

	2019-20	2020-21	2021-22 (P)	2022-23 (E)
Ethanol procured /targeted (in crore litres)	173	296	440	550
All-India average blending	5%	8.1%	10%	12%
Sugar equivalent diverted (in lakh tons)	08	21	34	50

ROADMAP TO ACHIEVE 20% ETHANOL BLENDING BY 2025

Petrol demand projections based on vehicle increase

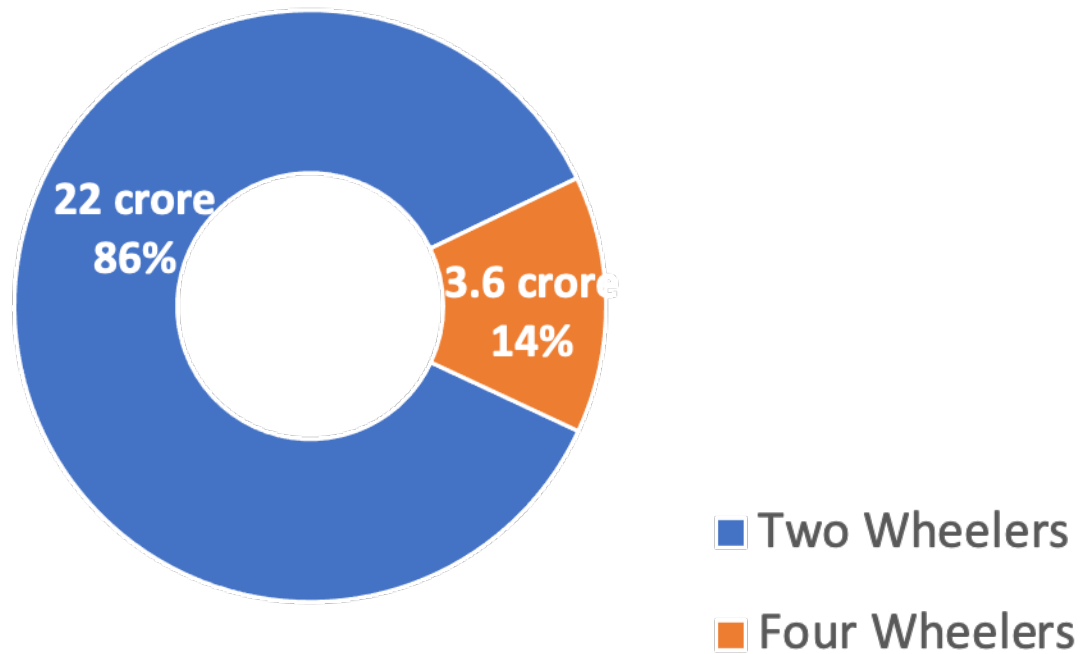
	Description	2021	2022	2023	2024	2025	2026
Projected addition of Petrol vehicles	Two-wheeler (in lakh)	139	167	181	195	211	227
	Four-wheeler (in lakh)	20	22	24	26	28	30
Petrol Demand Projections	Motor Petrol (cr. ltr.)	3908	4374	4515	4656	4939	5080

	Description	2021	2022	2023	2024	2025	2026
Ethanol Demand Projections (based on petrol consumption)	Blending Level	8.5%	10%	12%	15%	20%	20%
	Ethanol reqt. for blending (cr. ltr.)	332	437	542	698	988	1016

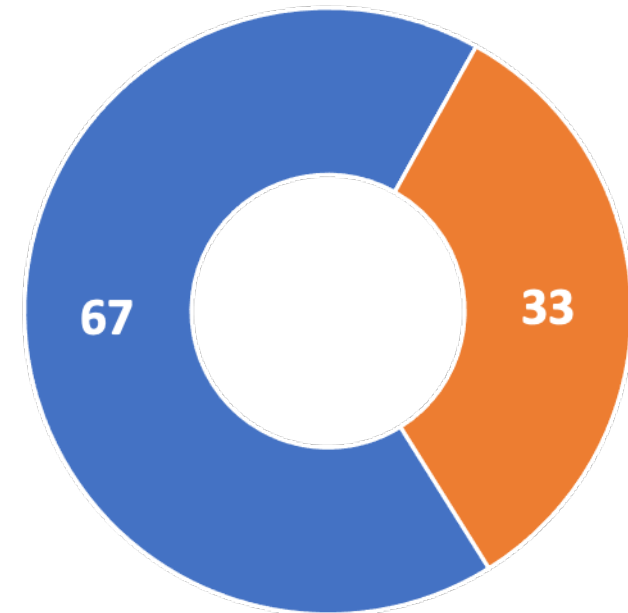
Source: Niti Ayog Report March 2021

Vehicle fleet in the country

Number of Vehicles, in Crore



Petrol Consumption, %



To achieve targeted blending of 20% by 2025:

Requirement of 1020 crore litres

- Adequate feedstock
- Production capacity
- Blending level growth
- Infrastructure/ storage capacity of OMCs
- E20 vehicles/ flex fuel vehicles

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Adequate availability of feed-stock: sugarcane

(In lakh ton)

Feed-stock	Annual production	Annual Consumption	Surplus
Sugarcane / molasses *	375	270	105 *

- This is in addition to 130 lakh tons of molasses, used for alcohol/ethanol manufacturing
- Around 400 crore litres expected to be supplied in current year from sugarcane/molasses

- In 2021-22 around 34 lakh tons of the surplus sugar equivalent is being diverted into ethanol
- **The balance surplus 71 lakh tons (105 – 34) tons of sugar/sugarcane, if diverted to ethanol, can produce another 400 crore litres**
- **Hence, sugarcane/molasses can produce the targeted 760 crore litres of ethanol by 2025**

Adequate availability of feed-stock: Grains/DFG/Maize

(In lakh ton)

Feed-stock	Annual production	Annual Consumption	Surplus
FCI rice	520 (Annual Procurement)	350 (Annual issue)	309 (Stock in central pool)
Maize	285	260	25

* About **70 crore litres** expected to be supplied from rice, damaged grains and maize in 2021-22

- Another **670 crore litres** ethanol required by 2025 from grains/maize (Niti Ayog)
- For which another 160 lakh tons of more grains and/or maize
- **All India** avg. yield of maize currently is **only 3 tons/hectare** (world average 6 & Pakistan's is 5)

Even if India improves its **yield of maize to 5 tons/hectare**, **additional maize of 190 lakh tons** can be produced

To achieve targeted blending of 20% by 2025:

Requirement of 1020 crore litres

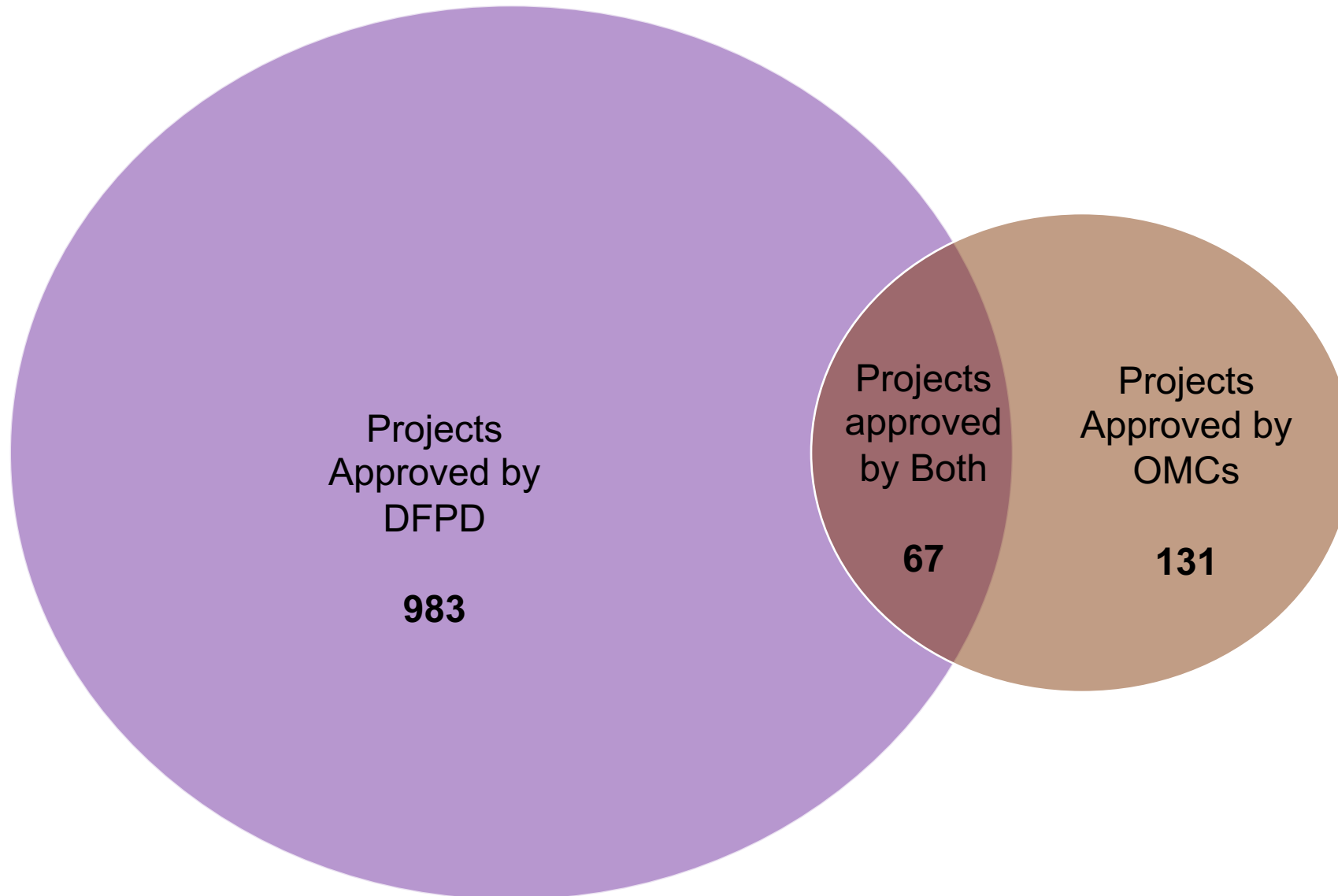
- Adequate feedstock
- **Production capacity**
- Blending level growth
- Infrastructure/ storage capacity of OMCs
- E20 vehicles/ flex fuel vehicles

Production capacity creation: Policies of DFPD & OMCs

- **DFPD*** has been encouraging ethanol capacity creation since 2018
 - Around 983 projects have in-principle approval under interest subvention schemes
 - DFPD has time and again extended the scheme for new and more investors
- **OMCs** in Aug '21, invited State-wise bids, for 648 cr. litres of additional capacity creation
 - OMCs signed long term bipartite purchase agreements (BPAs)
 - For buying ethanol from them for 10 years
 - With only 131 project proponents, for around 400 cr. litres of annual capacities

- DFPD = Deptt. of Food & PD, GOI
- OMCs = The 3 Oil companies (Indian Oil, BPCL, HPCL)

DFPD approved projects and OMCs' shortlisted projects



Problems in the EOI of OMCs for BPAs/TPAs

- Banks issued “SOP cum Guidelines” to make loans easier for ethanol projects
- The SOPs require fulfilment of **both** the following conditions:
 - a) In-principle approval of **DFPD** and
 - b) Long term bipartite purchase agreements (BPA) between **OMCs** and project proponents
- **Banks not willing to give loans if both conditions not fulfilled**
- **Thus only 67 projects are eligible under SOP**
 - Some of them may **not be found credit-worthy by Banks**

Problems in the EOI of OMCS for BPAs/TPAs

- While shortlisting projects, OMCs have made following errors
 - Not checked credit-worthiness of genuineness of claims of the companies
 - Ignored the sugarcane producing States of UP, Maharashtra & Karnataka (were given zero, 8.9, 18 crore litres of capacity creation against 649 crores for all-India)
 - States not having sugarcane or rice or maize like Kerala, NE, Ladakh/J&K given large allocations
- OMCs not signing the long term purchase agreements with
 - **EXISTING** ethanol producers and
 - New ethanol plants, who are **not interested in the concessional loans**

Over 80% cane production from 3 States



Capacity reqd. from ALL to achieve 20% blending by 2025

(In crore litres)

Current & required capacities	Cane/ molasses	Grain-based	Total
Ethanol/alcohol capacity required in 2025	760	740	1500
Current ethanol/alcohol capacity	445	258	703
Capacity to be added	315	482	797
Ethanol requirement for 20% blending in 2025	550	446	1016

Source: Niti Ayog

- Important to note that **another over 300 crore litre of capacity is still required in cane/molasses based distilleries**

To overcome current problem of finances & capacity creation

Projects who get bank loans sanctioned, should be given

a) in-principle approval of DFPD

b) OMCs should sign long term purchase agreements (BPAs/TPAs)

Should be done within 7 days from date of application by the companies

Otherwise, pace of capacity creation will see a major fall, and achieving 20% ethanol production by 2025 will become extremely difficult

To achieve targeted blending of 20% by 2025:

Requirement of 1020 crore litres

- Adequate feedstock
- Production capacity
- **Blending level growth**
- Infrastructure/ storage capacity of OMCs
- E20 vehicles/ flex fuel vehicles

Blending level has to move from 10% now to 20% by 2025

- 10% ethanol blending with petrol expected in current year 2022
 - As on date 9.60% already achieved
- Hon'ble PM's target is to achieve 20% by 2025
 - There has to be a smooth & gradual progression from 10% to 20% in next 3 years
 - Hence, blend levels should increase to 12-13% in 2023 and 15-16% by 2024 to reach 20% by 2025

To achieve targeted blending of 20% by 2025:

Requirement of 1020 crore litres

- Adequate feedstock
- Production capacity
- Blending level growth
- **Infrastructure/ storage capacity**
- E20 vehicles/ flex fuel vehicles

Infrastructure and storage with OMCs

With increase in blend levels and higher use of ethanol, there is need to:

1. Increase ethanol **storage** capacities at depots of OMCs across the country
2. To carry 1016 crore litres of ethanol, in 3 years, across the country, Indian **railway** network and laying of **pipelines** will be crucial
3. For **dispensing** higher ethanol blended petrol as also pure ethanol, need for OMCs to make necessary changes at **retail pumps/stations**

To achieve targeted blending of 20% by 2025:

Requirement of 1020 crore litres

- Adequate feedstock
- Production capacity
- Blending level growth
- Infrastructure/ storage capacity of OMCs
- E20 vehicles/ flex fuel vehicles

Crucial to augment demand and use of more ethanol

- Hon'ble PM has announced on 6th June 2021 that
 - All new vehicles will be E20 compliant from April 2023
- Considering that about 8% of the vehicles get replaced with new ones every year
 - About 25% of vehicles in 2025 will be E20 and balance 75% will be E10
 - Means E20 new⁴³ vehicles from April 2023 will not be enough
- Therefore, flex fuel vehicles (FFVs) will be needed in India as early as possible
 - FFVs can run on 0 to 100% ethanol or petrol or any level of blend therein
 - Even if FFVs run at 80-85% ethanol, the demand for ethanol from FFVs is increased by 4 times as compared to E20
- Therefore, launching of FFVs are crucial and as quickly as possible if we have to achieve 20% blending by 2025

Concluding

- India can produce 375-380 lakh tons of sugar, giving surplus of 105 lakh tons over domestic requirement
- Important to use surplus sugarcane to make ethanol (and not too much sugar)
- There is enough raw material/ feedstock to produce 1020 crore litres of ethanol by 2025
- DFPD's policies encouraging for capacity creation, but OMCs' policies are restrictive, hence
 - Give DFPD approval and OMCs' BPAs/TPAs to all projects having sanctioned bank loans
 - OMCs should sign BPAs/TPAs with sugar companies too (sugarcane/molasses will continue to be a very important feedstock)
 - OMCs should also immediately sign BPAs/TPAs with "existing" ethanol producers

Concluding

- Blending level should gradually grow from current 10% to 20% in next 3 years
- Need for infrastructural development in storage, transportation and distribution
- Need of E20s as also flex fuel vehicles to be rolled out in 2023

To ensure timely payment of FRP to farmers

- Need to rationalize sugarcane pricing policy
- Implement revenue sharing formula for cane pricing
- Allow sugar prices at adequate levels to allow cover costs
- OMCs should release payments within 10 days from receipt of ethanol (instead of current 21 days)

Faster payments for ethanol supplies

- Tender conditions prescribe that ***"100% payment shall be made within 21 days after receipt of material at our sites & submission of Original Invoice(s)"***
- Considering transport time from distillery to Depot, delays in some places to decant the tankers and then physically submit original invoice(s)
 - **Total time taken from "despatch to receipt of payment" becomes over 30 days**
- Private Oil companies pay immediately on despatch from distillery
 - Alcohol/RS buyers in fact pay in advance
- Request that payment from OMCs be released within **10 days** from receipt of ethanol at the depots and submission of original invoice(s)

THANK YOU

Sugar production increase

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Acreage (lakh hect.)	52.8	53.4	53.1	52.8	49.5	50.4	55.0	48.4	52.9
Sugar (lakh tons)	251.4	243.9	283.1	251.3	202.9	324.8	331.0	274.0	311.9

- Increase in sugar production not because of area increase
 - More because of better cane varieties
 - Millers getting more sugar because of higher recoveries
 - Farmers getting higher return due to better yields
 - Farmers also getting better FRP because of higher recoveries: 100% premium over FRP passed to farmer

Required capacity for 20% blending by 2025

(In crore litres)

Supplies and requirement	20% ethanol blending	Other uses	Total
Requirement	1016	334	1350
From sugarcane and molasses	550	134	684
From grain and maize	466	200	666

Current & required capacities	Cane /molasses	Grain-based	Total
Ethanol/alcohol capacity required in 2025	760	740	1500
Current ethanol/alcohol capacity	445	258	703
Capacity to be added	315	482	797

There is adequate feedstock availability for above ethanol production:

- Molasses + Surplus 60 lakh tons of sugar.
- 165 lakh tons of maize, surplus rice & damaged food grains