

## Objective

We propose a new methodology to measure distortions to agricultural incentives for economic agents along the value chains and for the complete value chains of agricultural commodities. We use an amalgamated value chain approach, including the primary producers and the processors of commodities. We apply this methodology to selected value chains in the Indian agricultural market: rapeseed complex, groundnut complex, ethanol-molasses-sugar-sugarcane.

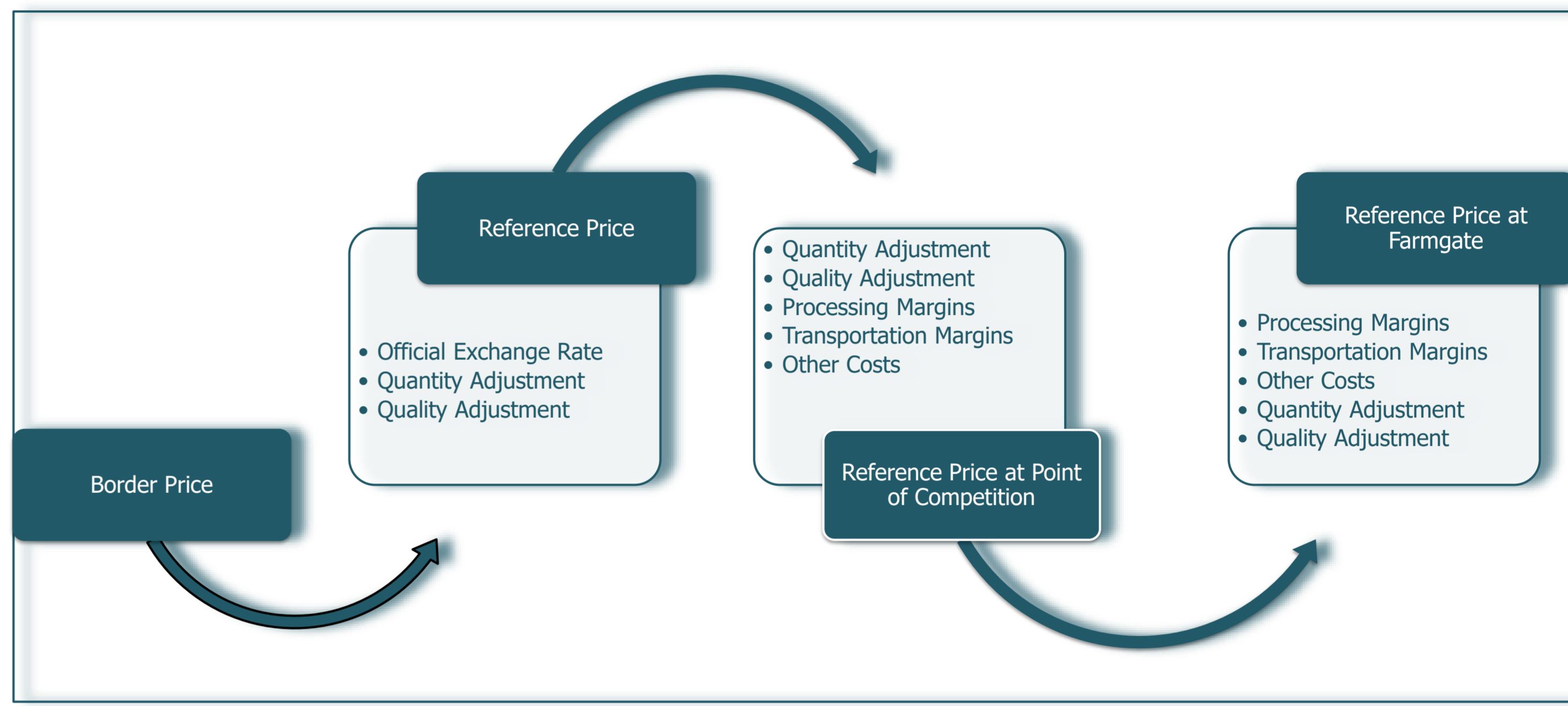
## Methodology and Data

We expand NRP methodology for individual commodities to a methodology for the complete value chain by adding the dimension of downstream outputs and compute NRPs for the complete value chain. We utilize state-level price data for India from 2008/2009 through 2011/2012 along with international prices and input-output coefficients for all primary commodities, by-products, and processed goods.

## Value Chains

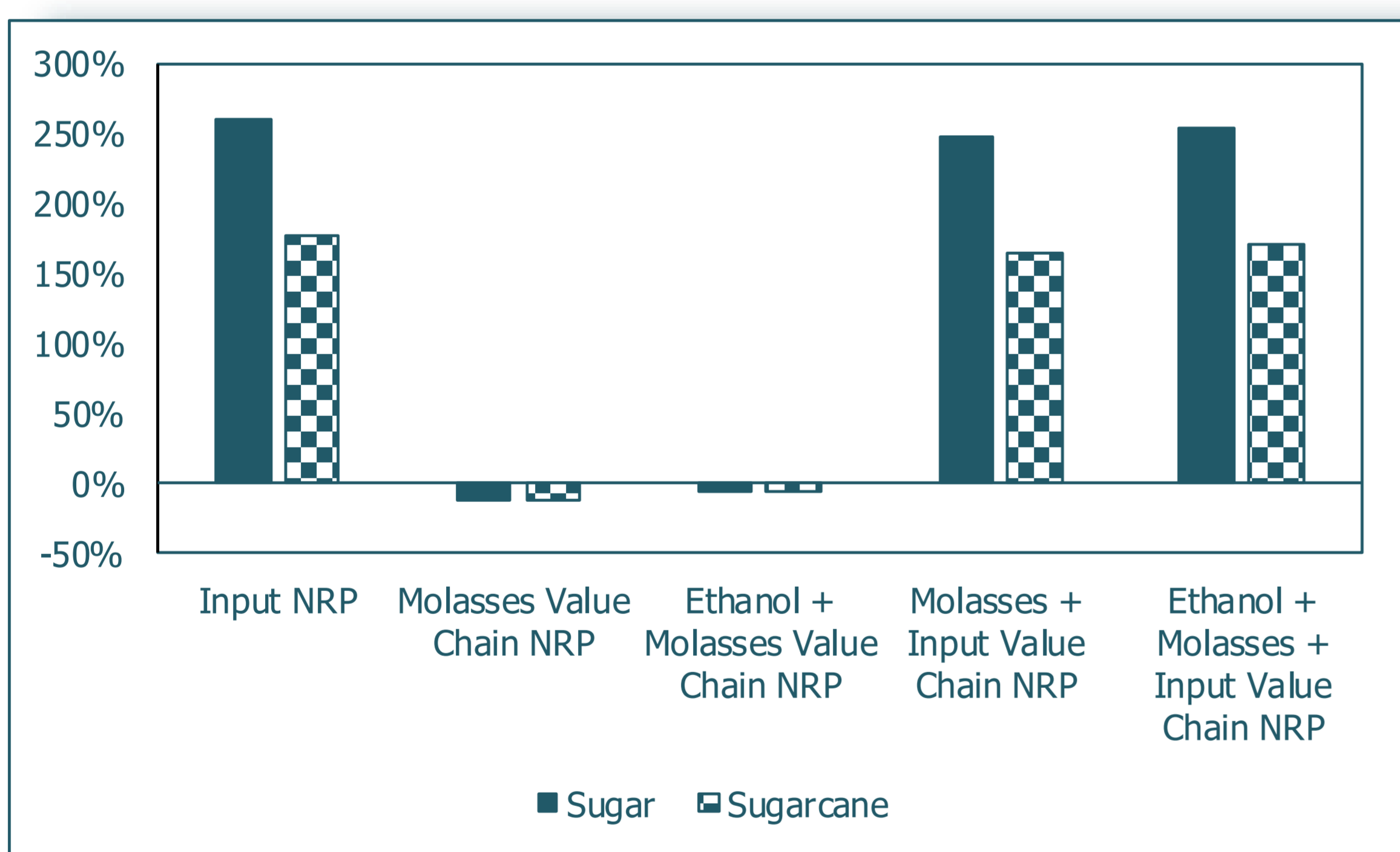
We group value chains into two: 1) where the primary commodity is tradable (oilseeds) and 2) where the primary commodity is not tradable (sugarcane) but output is tradable (sugar). We develop our methodology for three types of value chains i) there is an addition of a new value chain by policy (ethanol through blend mandates), ii) a value chain where a by-product is created in processing of input (molasses through sugar production), and iii) a value chain where a commodity is processed into new outputs (meal and oil from oilseeds).

## Price Transmission along Value Chain

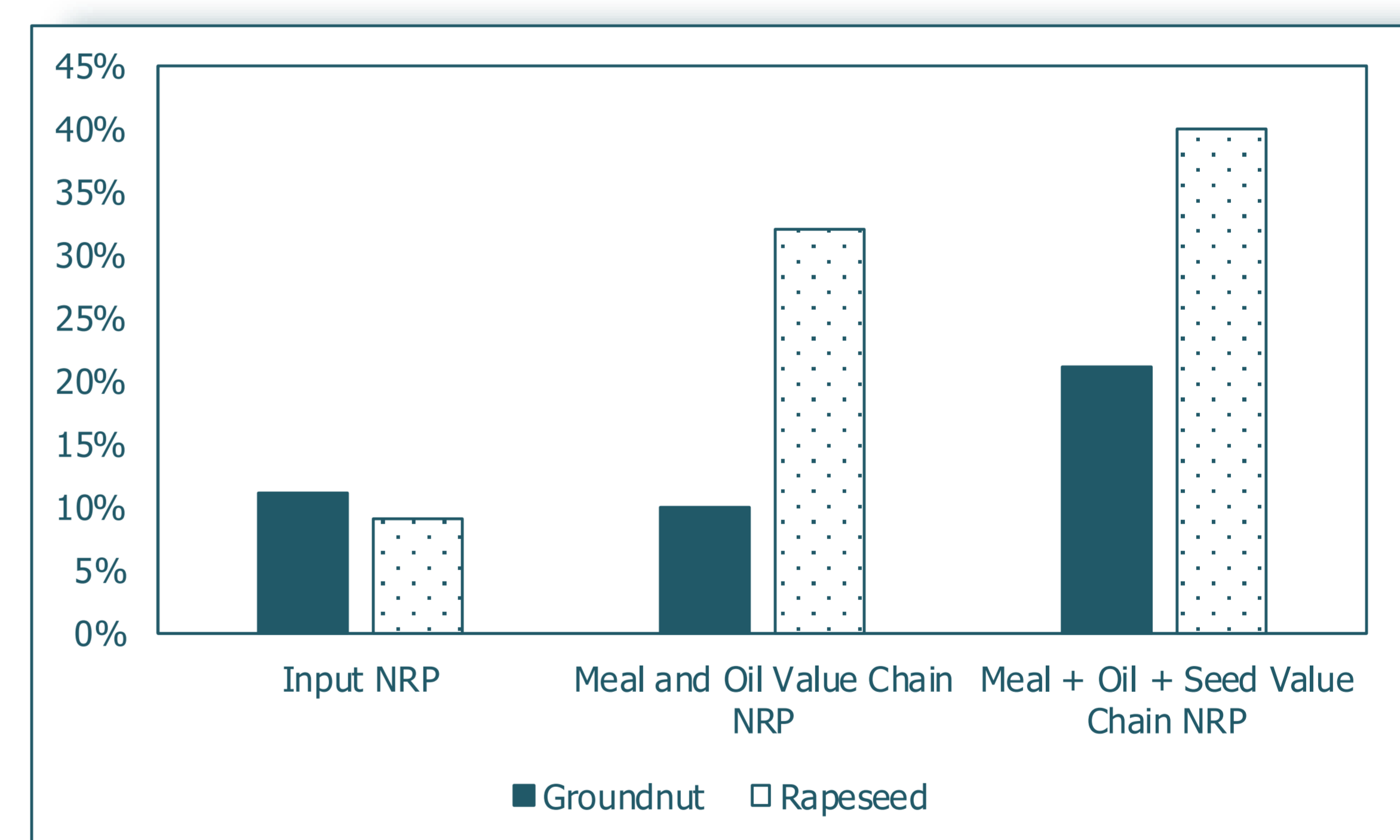


## Results

India Value Chain NRPs for Ethanol-Molasses-Sugar Value Chain



India Value Chain NRPs for Oilseeds Value Chain



NRPs for inputs (sugarcane) and for transformed output (sugar) are positive for India and for states, showing farmers are being protected. Sugar NRP is higher than sugarcane NRP showing gains are not evenly distributed among value chain agents. Both molasses and ethanol markets are disincentivised, but the taxation is lower for ethanol than that of molasses. Molasses value chain NRP is negative as molasses price is kept low to reduce cost of ethanol production and to help blenders. Molasses and ethanol value chain NRP is negative since GOI is maintaining a low ethanol price to aid blenders and final consumers, although the ethanol producers are supported by the blend mandate that has positive impact on ethanol price.

NRPs for groundnut and rapeseed are positive for India and for states, showing farmers are being protected. The results show that oil and meal value chains of groundnuts and rapeseed are protected, indicating that crushing industry is subsidized enough that even though they buy inputs at higher prices, their net subsidy is positive. Protection in rapeseed value chain is more geared towards the processing side, relative to groundnut value chain. Producers of meal and oil are subsidized in order to aid domestic crushing industry development which is geared towards small-scale.

## Conclusions

Computing NRPs for the downstream outputs of the value chain and for the complete value chain that is comparable to NRP of the main commodity normalized at the farmer level makes it possible to evaluate the impacts of policy space on different economic agents in a consistent manner. Using an amalgamated value chain approach, by including the primary producers and the processors, to measure distortions to agricultural incentives, paints a nuanced picture, highlighting that producers and processors "throughout the value" chain face different impacts of the policies — some positive and some negative.