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# Effective Implementation of Agricultural Price and Marketing Policy for Doubling Farmers Incomes: Doable Priority Actions

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## Abstract

This paper highlights some doable action points in the realm of implementation of agricultural prices and marketing policies that need emphasis by policy makers and development agencies in the country. It discusses issues related to effective implementation of minimum support price (MSP) and also under-use of market intervention scheme. The relevance and importance of agricultural price forecast system is discussed along with the needed actions. A brief review of two important initiatives within the National Agricultural Research System (NARS) is presented along with the capacity that has been built in the country. The paper also gives some suggestions on speeding up of third phase of agricultural marketing reforms and outlines the progress on move towards National Agricultural Market (e-NAM). It brings out the issues related to farmers' demand for 'cost-plus formula' for deciding the level of MSPs by the government and finally suggests some doable actions on the implementation of agricultural prices and marketing policies to enhance farmers' income.

**Key words:** Agricultural price policy, minimum support price, agricultural marketing policy, e-NAM, market reforms, doable priority actions

**JEL Classification:** Q18, Q13

## 1. Introduction

The objective of this paper is to draw attention to some doable action points in the realm of implementation of agricultural prices and marketing policies that need emphasis by policy makers and development functionaries in the country. Some of these are being aggressively pointed out by farmers' organizations throughout the country. The motivation for this paper is that the 13 issues identified for discussion in the conference on the theme of Doubling Farmers Income, do not explicitly recognize these aspects for which Indian farmers and their organizations have been agitating during the past six months.

The paper draws heavily from my recent writings on the issue (Acharya, 2017a; 2017b; 2017c). The paper is divided into eight sections. First of all, the issues related to effective implementation of minimum support prices (MSPs) are discussed in the second section. In the third section, the issues related to the under-use of market intervention scheme are brought out. The importance of agricultural price forecast system and what needs to be done are discussed in the fourth section. It also includes a brief review of two important initiatives within National Agricultural Research System (NARS) and the capacity that has been built in the country. In the next section, we bring out as to what action is needed to speed-up the process of third phase of agricultural marketing reforms. Some observations on the progress of E-NAM are given in the sixth section. In the seventh section, we bring out the issues related to farmers' demand for cost-plus

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formula for deciding the level of MSPs and to fix MSPs at a level 50 per cent higher than the cost of production. Conclusions and specific doable suggestions in the form of way forward are given in the last section.

## 2. What Ails Effective Implementation of Minimum Support Prices?

There are 24 commodities for which MSPs are announced by the Government of India. For the purpose of analyzing effective implementation, it is pertinent to divide these into two groups of crops. Wheat and paddy (rice) need to be discussed separately from rest of the crops.

### Wheat and Paddy (Rice)

Assurance of MSP is critical for this group because 70 per cent of the population is covered under PDS, which assures rice and wheat at a rate of ₹ 2 or 3 per kg to the consumers, impacting the market price level for these grains. Further, every year around 50 to 60 million tonnes are purchased at MSP giving a general impression that MSP is very effective for these grains. But effectiveness is questionable in these crops also. There are three clear instances to prove this point. One, after the decentralized procurement scheme (DPS) was launched in the country, the quantity of price support purchases in states like Madhya Pradesh, Chhatisgarh, Jharkhand and Odisha went up considerably, showing that prior to the launch of this scheme, the paddy or wheat growers in these states were not getting even the MSPs. Two, in the current *rabi* marketing season, when new Uttar Pradesh government made extra efforts, the MSP purchases of wheat aggregated to more than three million tones, showing that in the absence of these efforts many wheat growers of the state would not have received the MSP for their wheat produce. And three, it was not uncommon to observe that several lots of wheat were being auctioned in the market yards at below the MSP, by the side of MSP purchase centres.

This situation is mainly because of a mix-up in understanding of distinction between MSP purchases and public procurement at operational levels. The origin of this mix-up can be traced to a regime of two sets of prices for wheat and paddy, viz. MSP and separate procurement price, with distinctly different objectives, for six years from 1965 to 1971. This was followed by a period of 20 years from 1971 to 1991 when

procurement price was treated as MSP for these crops. During this period of procurement price (20 years), farmers suffered because as soon as the so-called procurement targets were fulfilled, the agencies shut the operations even when market prices continued to rule below MSP. Realizing this misuse of procurement word, in 1991, the CACP recommended and government accepted that since the *kharif* season crops of 1991, there shall be no procurement prices (and no associated procurement targets) and instead there shall be minimum support prices also for paddy and wheat (for all other crops, there were only MSPs) (Acharya and Agarwal, 1994). The implications of this change were/are quite serious.

As MSP is a price guarantee, MSP operations are required to be carried out (a) in all the markets where prices dip below MSP; and (b) throughout the marketing season till farmers continue to offer their produce at MSP to the purchase agencies. It is inherent in MSP operations that in some years, we end up with purchases much higher than that needed for meeting PDS and buffer stocking requirements, while in others, MSP purchases may be far lower than these requirements (OMSS and imports are the instruments to complement MSP operations). The purchase targets fixed in MSP operations are only to help agencies to plan and prepare in advance for logistics (purchase centres, gunny bags, money for disbursement to farmers, etc.). Even after 26 years of this change, the price support agencies and their functionaries at lower levels are not able to distinguish between targets of procurement and intention of price guarantee. As a consequence, the farmers suffer who are either not aware of this distinction or are not able to exert their right to get the MSP for their produce. A clear case of this confusion was observed during the support operations for wheat in the current *rabi* marketing season. While purchase agencies shut their shops as soon as purchase targets were achieved, the farmers continued to suffer and had to sell their produce below MSPs. As the farmers have now awakened, their resentment and anguish is obvious. Every year, almost all reports of CACP have expressed concerns and cited several cases of ineffective MSP operations in many states (For example see CACP, 2015a and 2015b). The main reason is the slackness and apathy on the part of quite a few state governments. It is not uncommon to hear Agriculture Ministers of some state governments

saying that this is the purview of the central government and the nodal agencies (FCI).

### Other Crops under MSP Regime

For raw cotton, raw jute and copra, owing to the pro-active role of concerned states, nodal agencies, related industry & trade organizations and also farmers collectives, the situation is relatively better. For sugarcane, there is no commitment of government purchases, hence the issue is different.

For coarse cereals, pulses and oilseeds, MSP purchase operations were/are traditionally not needed every year. That is one of the reasons that whenever there is bumper production in some areas, the MSP purchase system is neither in place nor active. Further, oilseeds and pulses are not a part of PDS. Even in the case of coarse cereals, which are covered under PDS, usually the responsibility of disposal of purchased quantities has to be taken by the concerned state. As a consequence, the state governments are not pro-active in undertaking the MSP purchase operations of these commodities. This year, when GOI decided to build the buffer stock of pulses, the purchase operations were undertaken but the mix-up of procurement targets and price support operation was clearly visible. While the Ministry of Food and Procurement took pride in fulfilling the procurement targets of pulses, little concern was shown to a large number of pulse growers who were denied MSP for their produce.

There are two other practices being adopted by the purchase agencies which is, in effect, denying the MSP to many farmers. This holds true for all the crops covered under MSP. These practices are: (a) a cap on quantity to be accepted from the seller; and (b) accepting the produce at the purchase centre only from the farmer. These both have no rationale in MSP regime. A quantity cap (even if linked to area under the crop) is based on some average productivity. The average is average and is meant for only generating an advance estimate of likely MSP purchases and no more. If a farmer produces more than this average, denying him MSP is in a sense disincentive to a more efficient producer-farmer. Limiting the purchase only from the farmers is also against the principle of price guarantee inherent in MSP. Take a case of farmer who has small surplus of say five quintals and located some 15/20 km away from the purchase centre. Traveling with

small surplus may require ₹ 70 per quintal of transport and handling and half day of foregoing the farm work or wages (say about ₹ 130). If another larger farmer takes his produce to the purchase centre and it is accepted for purchase at MSP, effectively the system will ensure MSP to the small farmer who cannot travel to the purchase centre. In both cases, small farmer's net realization is MSP minus ₹ 200. But if the system does not accept the produce from another farmer, this small farmer will be paid less than MSP minus ₹ 200 by the larger farmer. The same logic applies to village trader/aggregator, who usually collects the produce from small farmers in remotely located villages. Therefore, if MSP is to be ensured to even small farmers of remote areas, all the produce offered by the farmers (small or large) or by village traders/aggregators should be accepted at MSP purchase centres. There is a need to do away with the cap on quantity and farmers Id with proof of area under the crop.

By and large, where the state governments and their agencies are pro-active in advance, the situation is better. However, much more needs to be done to solve the problem of denial of even MSP to the farmers, for which the farmers have now awakened and protesting. The state government of Madhya Pradesh has recently launched a differential price scheme for farmers in the current *kharif* season. The registered farmers will be paid the difference of MSP and actual price received by them (model price in the designated markets for specified period). Till the third week of October, around 16 lakh farmers have reportedly registered under the scheme. This is a good initiative that needs to be observed and up-scaled for obvious reasons.

### 3. Market Intervention Scheme (MIS/PSF)

MIS is in operation for the past more than three decades. The purpose is to provide price support for those commodities that are not covered in MSP policy. This is meant for those commodities where price support operations are not needed every year and are required only in some areas/regions. The scheme got a little boost when special funds were provided to SFAC under the title Price Stabilization Fund (PSF). MIS is more flexible than MSP regime. Under MIS, support can be provided in some years, for a limited but defined period, in specified critical markets and by purchasing specified quantities. The initiative has to emerge from the concerned state. The support price, markets and

quantities to be purchased are decided mutually by the state and the centre. The losses, if any, are shared equally by the centre and state (75:25 for NE states) (Acharya and Agarwal, 2016).

In the past, the scheme was used very rarely mainly due to slackness on the part of states, not coming forward in time. There are several commodities where wide fluctuations in prices are very frequent. There is lot of resentment from the consumers due to very high prices at one time and from the farmers due to very low prices only after a few months. The commodities in this group include onion, potato, chilly, tomato, apple, coriander, and cumin. The new state government in Uttar Pradesh announced to purchase around one lakh tonnes of potato from farmers at a price of ₹ 487 per quintal is an example of the need for up-scaling MIS. Another case is the reported announcement of Maharashtra government sanctioning payment of ₹ 100 per quintal to onion growers who sold their produce at distressing prices during July-August 2016. Such ad-hoc measures do help but do not show the prudent use of a scheme like MIS (PSF) that is in place since long. We need a well-articulated institutional mechanism both at the central and state levels to reach the benefits of this scheme to the farmers and incentivize them. Specifically (a) there is a need for an exclusive and dedicated institutional framework at the state level, consisting of a Nodal Officer and mandated cell, to foresee the demand, supply and price situation well in advance, move a proposal to the Centre, and prepare a plan of action (the focus of state level departments of agriculture and horticulture remains on production related activities in most of the states); (b) it is also necessary to specify the mandated commodities at the centre, with scope for state- and year-specific additional commodities; (c) at the central level, the guidelines in the form of PSF Scheme are available but going by the past experience, a pro-active stance at the central level is necessary to guide the states' nodal agencies to come up with timely proposals and to process these proposals speedily for timely interventions; and (d) a very critical aspect in implementing the MIS well in time is the need for a credible outlook information generating system, including price forecasts, in the country. It is quite satisfying to note that some states like Madhya Pradesh (MP) are active and moving ahead in this direction. The MP state government has reportedly created a state level PSF of ₹ 1000 crore and designated

the State Agricultural Marketing Board as nodal agency to manage it. Such initiatives should be encouraged and replicated.

#### **4. Price Forecasts: Relevance, Importance and Status**

##### **Farmers' Price Risks**

The farmers face several kinds of risks like weather risks, production process risks (input availability and quality, insect pests, diseases, etc.), and marketing risks. The risks associated with marketing process are of three types viz.: physical risks (loss in quantity and quality), institutional risks, and price risks. Risks and uncertainties, by definition, cannot be eliminated. At best, these can be minimized. The physical risks in marketing can be minimized by adopting suitable measures during handling, storage and transportation. In the case of price risks, the individual farmer is almost helpless. It may be mentioned here that price uncertainties are faced by all the stakeholders in agricultural marketing. Apart from farmers, these include assembling traders, bulk buyers, processors, wholesalers and importers/exporters. Other than farmers, all stakeholders, individually or collectively, make their own predictions based on their experience and information accessed from various sources and plan their actions or responses to maximize their gains or profits. It is only the farmers who are at a relative disadvantage to foresee the ensuing price situation.

As discussed in the preceding two sections, for reducing the price risks of farmers, at least two major schemes, viz. minimum support price scheme and market intervention scheme are in operation for crop products since long (Acharya and Agarwal, 2016). But there are several questions related to their effective implementation. My assessment is that farmers' discontent, arising from this, is getting increasingly aggressive in most of the Indian states. Bumper production of horticultural crops, especially vegetables, in several years and of pulses during past year resulted in crash in prices when farmers sold their produce and institutional arrangements were either absent or did not work adequately. Farmers' resentment against the system, therefore, is obvious.

Apart from the ineffective implementation of MSP policy and MIS, farmers also suffer because quite often

trade policy decisions are not well-timed. This happens because predicted prices are not available from our own credible sources. As a result, not only the farmers but consumers also suffer. Several cases can be cited to illustrate this.

- (i) In 2006-08, when India needed to import 6 to 7 million tonnes of wheat, we lost around ₹ 50 billion due to unavailability of our own global outlook information on wheat prices.
- (ii) Recently when prices of pulses sky rocketed, we went for large imports. The imports took time and by the time imports arrived, next harvest season was on and farmers suffered due to lower prices. Earlier the consumers suffered and later the farmers suffered due to lack of advance trade decisions.
- (iii) Similarly, when the onion prices increased sharply in the market, the government's decision to restrict the exports and to impose stocking restrictions were only ad-hoc measures taken too late.
- (iv) Conversely, when there is a bumper production of a crop (say onion) and prices crash, the belated decision to allow liberal exports by fixing MEP at lower levels hardly help the farmers because by the time these measures materialize, most farmers have already sold their produce at almost throwaway prices. If crop price forecasts are available in advance, the policy decisions and interventions can be well-timed to achieve the intended outcomes and help the farmers as well as consumers.

### **Status of Market Intelligence and Outlook Generation System**

A very critical aspect for reaching the benefits of all these three instruments of agricultural price policy (MSP, MIS and Trade policy decisions) to farmers, and ultimately also to the consumers, is the timely proactive stance by the state governments as also the centre. An essential pre-requisite for this to happen is the availability of credible 'likely price situation' well in advance of the harvest season. Realizing this need, two important initiatives were taken by the ICAR in the National Agricultural Research System (NARS) in 2008-09, as a part of The World Bank-assisted National Agricultural Innovation Project (NAIP). It is relevant to note some salient features of these for this discussion.

### **Establishment and Networking of Agricultural Market Intelligence Centres**

This project was in the nature of operational research project during the period 2009 to 2014. The consortium leader was Tamil Nadu Agricultural University (TNAU), which had successful experience of operating a similar project as a part of their Domestic and Export Market Intelligence Cell (DEMIC). Consortium partners were 10 State Agricultural Universities, viz.: HAU Hisar, GBPUAT Pantnagar, PAU Ludhiana, MPUAT Udaipur, PDKV Akola, APAU Hyderabad, UAS Bangalore, UAS Dharwad, GAU Junagarh and KAU Trissur.

The team reviewed globally available price forecasting models (ARMA, ARIMA, ARFIMA, LARCH, GARCH and ANN) and sharpened its methodology. Measures of forecasting accuracy were also used. The team regularly brought out pre-sowing and pre-harvest forecasts for 34 crop products (including cereals, pulses, oilseeds, cotton, vegetables and spices/condiments) with 90 to 100 per cent accuracy. The price forecasts were widely disseminated through print and visual media, mobile applications, radio broadcasts and also through tie-ups with organizations having networks with farmers. Regular feedbacks were received and analyzed. The impact assessments were also done that revealed positive impact of the forecasts on farmers' incomes. The project created adequate technical and human resource capacity at state and regional levels within NARS. The project also created demand for price forecasts amongst all the stakeholders (National Coordinator, 2011).

At the time of sanctioning the project, in view of the need of times, there was a clear understanding at the highest level within NARS, that at the end of the NAIP, the AMICs will be absorbed and made a regular part of the activities within NARS. Accordingly, at the end of NAIP, the ICAR decided to carry the work forward by launching a Network Project on the theme with NIAP (NCAP) as the team leader and different group of partner institutions. The network project, under the leadership of NIAP (NCAP) carried the work forward and further strengthened the technical and human resource capacity for price forecasts within NARS at the state level (Saxena and Pavithra, 2016). As happens with all the projects, the work had to be wound up and useful work could not continue as a regular activity.

### Decision Support System for Commodity Market Outlook Generation

This project, much broader than the AMIC project, was in the nature of left side of basic-applied-adaptive continuum. The project was operated from 2009 to 2012. The NIAP (NCAP) was the consortium leader. The consortium partners initially were IARI (Division of Agricultural Economics) and IASRI (Kumar, 2011). The team reviewed at least nine existing global models and their features. These included USDA/ERS, IFPRI IMPACT, OECD AGRILINK, FAO World Food, EU Simulation (EUSIM), World Bank Outlook, ADB Outlook, Irish Agriculture and Arkansas Global Rice. Based on the review and its own iterations, the team came out with some evolving models for India for further refinements. These were (i) Grain Outlook Model (multi-commodity model that included rice, wheat and maize, with 2007 as the base year); and (ii) Oilseeds Outlook Model (multi-commodity model that included rapeseed/mustard, groundnut, soybean, oils and oil meals, with 2010 as the base year). The commodity market outlook statistical (CMOS) base was also created. The grain and oilseed models were developed under partial equilibrium framework, with a system of equations being simultaneously solved, using a non-linear programming approach. The models are dynamic and spatial with regional dimension on the supply side. On the demand side, the equations are modelled for the country as a whole. The forecasting capability is up to 2025. The Model Structure consists of (a) Producer Core System (area, yield, production and supply); (b) Consumer or Demand Core System (HH food demand, feed demand and total demand); (c) Trade Core System (exports, imports and trade balance); (d) Price Linkage Equation; and (e) Model Closure.

Subsequently, it was intended to (a) calibrate the model using new and better estimates of elasticities; (b) incorporate linkages with more related crops; (c) validate the model based on past data; (d) compare the forecast results with similar international commodity outlook models; (e) develop a user-friendly interface using software solutions; and (f) establish a Commodity Outlook Cell for regularizing outlook generation exercise. The team also conceptualized the human resource needs for such a cell. The project was co-terminus with NAIP. The work has not been carried forward.

### 5. Speeding up of Third Phase of Agricultural Marketing Reforms

The Government of India has formulated and recently circulated a new Model Agricultural Produce Marketing Regulation (APMR) Act (GoI, 2016/17). I feel that what is being proposed through the new Model Act is third phase of agricultural marketing reforms. The changes proposed in the new Model Act are quite significant and include (a) declaration of whole state/UT as one unified market; (b) APMCs to regulate practices only in respective principal market yards and sub-yards; (c) provision of single state-wide trading license; (d) allowing and promoting private wholesale market yards; (e) promoting farmer-consumer markets; (e) promoting e-trading; and (f) moving to a common national market for farm products. Some of these provisions already exist in the Model Act circulated in 2003 but the progress has not been satisfactory.

I had the opportunity of having remained associated with first two phases of reforms. First Model Act was circulated in late-1950s and early-1960s, which aimed at providing some minimum physical and institutional infrastructure in primary wholesale markets (farmers' first contact point with the market). It took almost 16 to 18 years for the major states to adopt it, mainly because the exercise of formulation of State Act, framing rules under the Act, notification and inviting objections, etc. has to be repeated in all the states and UTs. Based on the experience gained during the 1980s and 1990s, research reviews, impact studies and recommendations of quite a few high-powered committees, a new Model Act emerged in 2003. It had provisions for permitting contract farming, allowing direct purchases from farmers, promotion of farmer-consumer markets and setting up of private wholesale markets as alternatives to APMC yards. Despite prior consultation with state governments and even linking central grant to the anticipated reforms, till now only around half of the states have adopted and some only partially. Considering the long time being taken in introducing the intended reforms even after a consensus among the centre and states emerges, it will be a significant step if the subject of "Agricultural Marketing" is shifted from the 'state list' to the 'concurrent list' by amending the Constitution (Acharya, 2014; 2016b). If we really want to push agricultural marketing reforms at a fast pace, this amendment is called for (I had been pleading this for

the past 10 or 12 years). I think, we now have the right political environment to achieve this. When the Parliament and the state legislatures have agreed to vacate the space for a new entity like GST Council, there should not be major hiccup in bringing agricultural marketing in the concurrent list.

## 6. Move Towards National Agricultural Market (E-NAM)

This was being talked and discussed during the past 15 years, but nothing substantial came out. A pilot project in Gulbarga market and subsequent state-wide roll out in Karnataka state provided the base and a major step was the launch of E-NAM by the Prime Minister of India in July 2015. Target is to connect major 585 markets of the country through the E-NAM portal. SFAC has been designated as the lead promoter for helping APMCs with both hardware and software. Already 400 markets of 13 states are reportedly preparing for it. There are different stages through which E-NAM would ultimately emerge. As the experience in Karnataka shows, the stages are e-bidding and trading within the yard, and subsequently within the state and on the national portal. The other dimension is the number of commodities. Initially, only one or two commodities are e-traded. The number increases over time. For a trader to bid for a lot from a distant place/market, information about quality parameters of the lot from credible assayers ought to be available on the screen, which requires considerable infrastructure and skills in each market yard or location. Further, it is necessary to create or put in place adequate handling arrangements in the form of preliminary cleaning, grading, weighing, packaging and dispatch of the purchased lots on behalf of the distant buyer. These apart, the system of e-billing, e-payment, and generation of e-permits anywhere anytime has to be perfected and created in all the markets. These systems demand heavily on the market managers and functionaries. Quite often, even if everything is in place, the national server may remain down for many hours. The point is that it will require considerable time for the entire system to mature. Nevertheless there are immense advantages of the system on maturity in terms of more transparency in price discovery, better realization for the farmers and higher efficiency of the marketing system. The farmers, traders and other market functionaries are very enthusiastic about the

new system, which is a good sign. The point that I wish to make is that we should not be impatient in this matter and should not feel discouraged by the hiccups that are being faced at different levels. Let all of us strive hard to tackle the hiccups that are faced in this journey. My assessment is that it will be a great success if we are able to achieve 50 per cent of a perfect E-NAM (50% of commodities traded on national e-portal) by June 2020, i.e. after five years of its launch (Acharya, 2016a).

## 7. Mechanical Linkage of MSP to COP-Cost+ Formula: Issues

The factors considered by CACP and the Government of India for deciding the level of MSP for each crop and each season include cost of production, changes in input prices, trend in market prices, input-output price parity, inter-crop price parity, emerging demand and supply situation, international price situation, parity between price received and paid by the farmers, and likely effect on industrial cost structure, general price level and cost of living. Note that cost of production is only one of these factors and not the only one. I have always strongly felt and argued at various forums that farmers should get higher prices and as high as possible over and above the cost of production but no attempt should be made to mechanically link the MSP levels to cost of production (Acharya and Agrawal, 1994). This conviction is based on the following issues:

### (i) Whose Cost?

We have around 140 million operational farm holdings. For individual crops, the number may vary from 10 to 40 million. Even within the holdings, there are more than one plots of land with different productivity levels. The cost of production per unit output (COP) varies across plots and as well as across farms. For example, our studies on gram crop in Rajasthan revealed farm to farm COP ratio as 1:6 (Acharya, 1988). Even state average COP ratio is 1:3.5 for wheat and 1:2.0 to 3.5 for other crops (CACP, 2015a; 2015b). In this situation, if a national average of state level estimates of COP is taken to fix MSP on COP-plus formula, the margin over COP across the state will widely vary and the MSP so fixed will not cover the average cost of many states. Each state will press for fixing MSP based on its COP, which will be



**Table 1. Imputed values as % of cost A2 for wheat: 2013-14**

State	Land	Family labour	Interest on own capital	Total
Punjab	125	13	17	155
Haryana	88	33	11	132
Rajasthan	61	57	21	139
Uttar Pradesh	67	26	11	104

Source: CACP (2015b)

hard to resist for any central government. In case, if one tries to cover the average cost of a state with the highest COP and fixes MSP at a level 50 per cent higher than that COP, it may not be sustainable. Take the case of wheat for illustration. As per CACP, the projected COP for wheat for West Bengal for 2016-17 marketing season (crop season 2015-16) was the highest among states (CACP, 2015b). A 50 per cent margin over COP (cost C2) of West Bengal would have meant the MSP of wheat as ₹ 3185 per quintal against the actual MSP announced for this season as ₹ 1525/quintal. Such a level of wheat MSP was not sustainable for the economy. It would have led to all round high inflation, and a step-up of food subsidy for wheat alone by around ₹ 1,80,000 crores. The point is that a cost-plus formula for fixation of MSP raises several questions and if adopted, the system may ultimately collapse.

### (ii) Which Cost?

The second issue with cost-plus formula is which cost to be considered. For this discussion, let us consider cost concept A2 and C2. Cost A2 includes all paid out costs, values of home/farm produced inputs, and all animal & machine costs (owned or hired). It includes all costs except imputed values of own land, family labour and interest on owned fixed capital. Cost C2 includes A2 plus all these three imputed values. The margin over cost A2 is the return a farmer gets for his land, family labour and capital investment. Wages of a labourer or salary of a salaried person is the return for his labour or time invested in the job. Their net income cannot be calculated by deducting the imputed values of their labour. It will turn out to be zero if imputed value (opportunity cost) of labour is deducted from the the wage or salary. A farmer by definition invests his labour and land in crop production. The margin over Cost A2 is the return a farmer gets for his family labour, land and capital. There is considerable

subjectivity in estimation of imputed values of land because it depends on several external factors apart from the productivity of land. For example, for wheat, as shown in Table 1, the imputed value of own land in Punjab was as high as 125 per cent of cost A2. It was 88 per cent in Haryana and 61 per cent in Rajasthan. The imputed value of family labour, as percentage of cost A2 varied from 13 per cent in Punjab to 57 per cent in Rajasthan. Taking all the three imputed values together, it varied from 104 per cent in UP to as high as 155 per cent of cost A2 in Punjab.

Though a fixed formula approach in determination of MSP is not followed by CACP or Government of India, the *ex-post* analysis reveals that the Recommended MSP for various crops covered the cost by reasonable margins. The MSP for *rabi*-marketing season 2016-17 had covered cost A2 by 194 per cent for mustard, 152 per cent for barley, 142 per cent for wheat and 98 per cent for gram (Table 2).

### (iii) Inter-state Variations in Cost of Production

The third issue relates to the inter-state variations in cost of production which, as already mentioned, varies widely. If a cost-plus formula is accepted, there will be pressure from high-cost states to provide similar margin over their cost also. If that is done, it will mean

**Table 2. MSP and percent margin over cost for *rabi* marketing season: 2016-17**

Crop	Over Cost A2	Over Cost C2
Wheat	142	31
Barley	152	13
Gram	98	10
Rapeseed-Mustard	194	26

Source: CACP (2015b)

(a) different MSPs for different states, and (b) low-cost states receiving lower MSP than high-cost states. There shall be several logistic problems in implementation. But the larger issue is that it will lead to irrational use of natural resources. More efficient regions will be at disadvantage because they will end up with lower MSP. For example, wheat farmers of Punjab and Haryana may end up getting one-third of MSP given to wheat growers of Maharashtra or West Bengal.

#### (iv) Inter-crop Variations in Cost and Market Price Realities

Another issue with cost-plus formula for fixing MSPs is that in several cases, such MSPs may be considerably divorced from market price realities. For example, the costs of production of barley and wheat in many years at state levels are not consistent with market prices. A recent case is that of the projected cost (A2+FL) of barley in Rajasthan, which was higher than that of wheat for *rabi* crops of 2015-16 season (CACP, 2015b). A cost-plus formula will lead to higher MSP for barley than that for wheat.

#### (v) Inter-year Fluctuations in COP of Rain-fed Crops

The fifth issue concerns inter-year variations in COP of rain-fed crops like coarse cereals, pulses and some oilseeds. In good rainfall years, the cost of cultivation remaining almost the same, COP per quintal goes down as compared to the preceding low rainfall year. This is amply clear from the cost estimates generated (and published) through the comprehensive scheme implemented in the country under the supervision of Directorate of Economics and Statistics, Ministry of Agriculture, Government of India. As an example, we cite the results for Rajasthan state. The estimates of COP are available for 15 to 30 years for 12 crops of Rajasthan, that include eight *kharif* and four *rabi* season crops. The summarized results for cost A2 and cost C2 are presented in Table 3. For *kharif* crops, the percentage of years when cost A2 per quintal was lower than that during the preceding year varied from 28.6 per cent to 57.1 per cent for *kharif* crops, with an average of 42 per cent. As regards cost C2 per quintal, it varied from 25 per cent to 50 per cent, with an average of 36.4 per cent. Even in the case of *rabi*

**Table 3. Frequency of lower cost of production in subsequent year in Rajasthan**

Crop	Total pairs	Cost A2/q		Cost C2/q	
		Number	%	Number	%
Bajra	27	11	40.7	13	48.1
Maize	27	11	40.7	8	29.6
Jowar	14	8	57.1	7	50.0
Moong	20	8	40.0	5	25.0
Urad	14	4	28.6	6	42.9
Sesamum	23	12	52.2	7	30.4
Soyabean	19	7	36.8	6	31.6
Cotton	18	7	38.9	7	38.9
All <i>kharif</i>	162	68	42.0	59	36.4
Wheat	29	8	27.6	8	27.6
Barley	27	11	40.7	11	40.7
Gram	29	10	34.5	12	41.4
Mustard	29	9	31.0	6	20.7
All <i>rabi</i>	114	38	33.3	37	32.5
All Crops	276	106	38.4	96	34.8

Note: Computed from Burark and Sharma (2017), p.12-20

crops, cost A2 per quintal was lower than the preceding year in 33.3 years and cost C2 per quintal was lower in 32.5 per cent years (Burark and Sharma, 2017). Given this reality, a cost-plus formula, if adopted, will lead to lowering MSP in subsequent year, which is quite against the medium-term guarantee inherent in MSP. A basic feature of our MSP policy has been that inter-year changes in MSP are non-negative, which will get disturbed if cost+ formula is mechanically adopted.

Obviously, mechanical linkage of MSP with COP will end up in so many complications, including state level (or even district level) MSPs that will be almost impossible to implement. Further, even the cost estimates may become distorted owing to the pressures on valuation of imputed values of own resources, including land. By and large, the entire system will become unsustainable and may eventually collapse.

## 8. Concluding Remarks and the Way Forward

The objective of this paper was to draw attention to some doable action points in the realm of implementation of agricultural prices and marketing policies with a view to enhancing the incomes of farm families. These also had been the focus of recent agitations by farmers' organizations in various parts of the country. These are as follows:

- (1) For effective implementation of MSP policy, (a) MSP purchases should be delinked from procurement targets; (b) advance arrangements should be made in terms of adequate number of purchase centres, handling logistics and timely payment to the farmers/sellers; (c) purchase operations should continue till sellers offer their produce at MSP; (d) there should be no quantity cap on the seller; (e) with a view to reaching the benefit of MSP even to small farmers of remote areas, large farmers working as aggregators or village assembling traders should be encouraged to offer the produce at MSP purchase centres; and (f) it should be enjoined on state governments to be pro-active in MSP policy implementation.
- (2) For effective implementation of market intervention scheme, there should be a well-articulated institutional mechanism both at the

central and state levels. Specifically, (a) centre (MoAFW) should specify mandated commodities with scope for state- and year-specific additional commodities; (b) there should be an exclusive and dedicated nodal officer and cell at the state level to prepare a plan of action in advance and to move the proposal to the centre for approval; and (c) a proactive stance is needed at the centre to guide the state nodal agencies to come up with timely proposals, process these speedily and revert to the states for timely interventions.

- (3) The AMIC project has successfully demonstrated the benefits derived by farmers by getting advance information on future prices in the form of price forecasts. This reduced the price information asymmetry faced by the farmers. Such price forecasts are also helpful to other stakeholders in the marketing system. More specifically, these can be used by state governments and related agencies for advance planning and preparation of action plan for timely and effective implementation of MSP policy and MIS to solve the problems for which farmers are agitating all over the country. These price forecasts, along with the regular output made available from market Outlook DSS can be very useful and serve as timely inputs for trade related policy decisions and other interventions. The technical and human resource capacity has already been created. However, despite these initial efforts, a credible nation-wide system for regularly generating and making available market intelligence/price forecasts and outlook information for key agricultural commodities is yet to take shape and become operational.

It must be recognized that project-mode has its inherent limitations. The continuity of trained and experienced scientists becomes difficult. Owing to the need for validation and moderation of results before final release, the continuation of associated core scientists is quite critical in such endeavours. Hence, such cells should necessarily operate in a program mode. The institutional framework ought to remain with agricultural science-based National Agricultural Research System (NARS) and must operate in a hub and spoke model. My suggestion

is that ICAR-National Institute of Agricultural Economics and Policy Research (NIAP) should work as hub and around 20 SAUs should be designated as spokes so that all key agricultural commodities are covered. Each selected SAU should be mandated to cover important crops of the region for price forecasts. Agricultural market Outlook DSS should also be housed in NIAP. A national initiative, in a program mode, somewhat on the pattern of IMDs weather forecasts, is urgently called for.

- (4) For pushing up the third phase of marketing reforms at a fast pace, the subject of 'agricultural marketing' should be shifted from the state list to the concurrent list by an amendment in the Constitution. Perhaps, we now have the right political environment to do this.
- (5) Launch of E-NAM is a big step in a move towards one national agricultural market. The hiccups that are being faced at various levels are not unexpected and all efforts should be made to tackle these. I feel that it will be a great success if we are able to achieve 50 per cent of a perfect E-NAM (50 % of commodities traded on E-NAM portal) by 2020 i.e. after five years of its launch.
- (6) While all efforts should be made to assure higher prices (as high as possible over costs) to the farmers, no attempt should be made to mechanically link MSPs with cost of production. This will be complicated, cumbersome and lead to a situation of state level or even district level MSPs, making it almost impossible to implement. The entire MSP system will become unsustainable and may eventually collapse.

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