

IMPACT OF FCV TOBACCO CROP SIZE REDUCTION IN ANDHRA PRADESH: *ADOPTION OF ALTERNATIVE CROPS*

K. VISWANATHA REDDY, D. DAMODAR REDDY, C. CHANDRASEKHARA RAO, B. HEMA AND A. SRINIVAS

ICAR-Central Tobacco Research Institute, Rajahmundry-533 105, Andhra Pradesh

(Received on 10th December, 2017 and accepted on 27th December, 2017)

During the recent years, the FCV tobacco in India underwent a structural change following the implementation of policy on crop size reduction of FCV tobacco by the Government of India. An assessment of the impact of the policy on tobacco area and adoption of alternative crops assumes great significance. The present study probes into the effect of the policy and its implications for the shift in the area to other alternative crops in Andhra Pradesh. The most significant observation is that crop substitution has taken place in major tobacco-growing districts in recent years with significant acreage. The substitution of tobacco area with other crops was clearly indicated in Andhra Pradesh. In the order of preference, pulses, chilli and cowpea are mostly preferred in Prakasam district, pulses, and chilli in Nellore district and maize and green gram were emerged as potential alternative crops to tobacco in West Godavari district. Nevertheless, the shift has demonstrated to the farmers and policy makers that there are alternatives for tobacco and crop replacement from tobacco is amidst possible. This policy has made significant impact on adoption of alternative crops with farmers' knowledge and experience and without looking into the formidable barriers such as economic feasibility and institutional support, processing and marketing infrastructure etc. Therefore, it is evident that the policy-driven approach is one of the potential instruments to foster transition from tobacco to other sustainable alternative crops in Andhra Pradesh during recent years.

Key Words: Andhra Pradesh, FCV Tobacco, Impact, Policy and Sustainable

INTRODUCTION

Tobacco is one of the important commercial crops of India. It occupies a predominant position in any discussion related to agricultural exports and revenue generation to the national exchequer and its potential to generate income and

employment to a sizable population in the country. Tobacco production is an important source of livelihood and provides direct and indirect employment to about 45.7 million population in the country (Tobacco Institute of India, 2017). During 2016-17, tobacco made a significant contribution of Rs. 28,712 crore to the Indian economy in terms of excise revenue (Rs. 22,737 crores) and export earnings (Rs. 5975 crores) (Tobacco Board, 2017). Presently, India stands second in production of tobacco, followed by China at the first position. It is being cultivated in an area of about 0.45 million hectares, accounting for 0.24 per cent of the total arable land in the country.

Tobacco crop possess uncertainties that primarily stem from emergence of diametrically divergent concerns about the livelihood security of millions of those who produce tobacco on one hand and the serious health risks for those who consume it on the other. The WHO - Framework Convention on Tobacco Control (FCTC) has added a new dimension to the complex nature of the crop. India is a signatory to the FCTC, which entails demand and supply reduction strategies. As a signatory to the FCTC, Government of India is obligated to reduce the area under tobacco and wean away the farmers to other economically viable alternative crops and cropping systems following the specific recommendations of the working group. Article 17 and 18 of FCTC lay stress on existing gaps in research and emphasize that the parties should promote research related to health / environmental, socio-economic aspects, and economically viable and sustainable alternatives to tobacco crop. On the other hand, as per the Tobacco Board Act, Tobacco board is mandated to ensure remunerative prices to the FCV tobacco growers by regulating the production and work for

the development of the industry. Tobacco Board is balancing these conflicting objectives by undertaking suitable measures for crop regulation as per the demand and supply for FCV tobacco in domestic and international markets, subject to maximum ceilings of crop size fixed by the Government of India.

The tobacco economy of India is quite complex with a multiple of stakeholders in the form of tobacco growers, farm labours, leaf pluckers, processors, *bidi* workers, and retailers, across the tobacco value-chain. In the recent past, the FCV tobacco farmers in India experienced a market crisis. Recently, the Tobacco Board reduced the FCV crop size significantly in India taking into consideration the gloomy situation in the global tobacco market and carryover stocks, dwindling demand for tobacco in both international/domestic markets and growers' demand for reduction of crop size for ensuring remunerative prices to their produce. Keeping this in view, the present paper has explored the policy impact of FCV crop size fixation on a structural shift in tobacco area and area under predominant crops grown in major tobacco production districts of Andhra Pradesh.

MATERIALS AND METHODS

In India, FCV tobacco is mainly grown in the states of Andhra Pradesh and Karnataka. This study is based on secondary time-series data mainly collected from various published sources viz. Agricultural Statistics at a Glance, and website of Directorate of Economics and Statistics (DES), Government of Andhra Pradesh. The present paper attempts to assess the impact of crop size reduction in FCV tobacco and farmers response towards alternative crops in major tobacco-growing districts of Andhra Pradesh. Two years data on area of FCV tobacco and other predominant crops before (2013-14, 2014-15) and after (2015-16, 2016-17) the policy decision by the Tobacco Board on crop size reduction was analysed in major tobacco growing districts. For this analysis, simple statistical tools like average, percentage change etc. will be utilized.

RESULTS AND DISCUSSION

Area and Production dynamics of FCV Tobacco in Andhra Pradesh

The following discussion brings out changes in tobacco area in comparison with other

predominant crops, in major tobacco growing districts during recent years, due to reduction of FCV tobacco crop size as a broad policy framework for regulating FCV tobacco production in Andhra Pradesh. To find out the effect of a policy decision on the area substitution between different crops, the share of area replaced by other crops was worked out by considering the major crops grown in tobacco growing districts. In India, FCV tobacco is a regulated crop by the Tobacco Board. This Board, ICAR-CTRI from the Government side and major tobacco companies in the private sector extend doorstep services to the FCV tobacco farming right from the soil and seed selection, cultural practices, and post-harvest management to marketing, for a hassle-free cultivation of tobacco. Notwithstanding all these things, the FCV tobacco farmers experienced a market crisis during the year 2014-15 owing to declining demand for tobacco in both international/domestic markets.

In this context, Tobacco Board has reduced the crop size from 172 million kg to 120 million kg during 2015-16. This crop size reduction accounts for 30.2 percent reduction in tobacco production compared to the previous year by considering dismal situation in the world tobacco market and carryover stocks, and growers' demand for reduction of crop size for ensuring remunerative prices for their produce. Consequently, around 36.23 thousand hectares of land was released from tobacco cultivation and available for taking up alternative crops in major tobacco growing districts of Andhra Pradesh, which accounts for 35.5 percent reduction in tobacco area compared to the 2014-15.

Table 1: Change in crop size and area in FCV tobacco in Andhra Pradesh

| FCV Tobacco | 2014-15 | 2015-16 |
|-------------------------------|----------------------|---------|
| Crop Size (M kg) | 172 | 120 |
| Decrease in production (M kg) | 52 (30.2 percent) | |
| Area (000 ha) | 122.12 | 85.89 |
| Decrease in area (000 ha) | 36.23 (35.5 percent) | |

Source: Tobacco Board, 2017

The implications of policy decision on crop size reduction in FCV tobacco has led to the

adoption of alternative crops and the area substitution between tobacco and other crops is quite possible in tobacco growing districts of Andhra Pradesh. The crops like maize, pulses (red gram, black gram, green gram, and chickpea), fodder crop (cowpea) and chilli, were considered as these are major alternative crops, which have potential to replace tobacco in Andhra Pradesh in the event of phasing out of tobacco.

Alternative crops adopted in response to cut in FCV tobacco crop size

This section analyses the area substitution between tobacco and other crops in major tobacco growing districts. This indicates a shift in the cropping pattern away from cultivation of tobacco during the recent years. Accordingly, farmers are opting for alternative crops within tobacco growing regions due to the reduction in crop size in FCV tobacco from 2015-16 onwards. Conventionally, farmers were following crop replacement to reduce economic risk associated with unfavourable weather, supplement soil nutrients, and conserve soil moisture, reduce market risk and maximize his revenue. During the year 2000-01, there was a crop holiday in Andhra Pradesh, tobacco growers in light soils of Prakasam district have taken up pulses, and castor in place of tobacco to realize remunerative returns. The growers in the black soil areas of Prakasam and Nellore districts achieved good yields in pulses, and groundnut. Majority of the tobacco growers know that the government is looking for alternatives to reduce tobacco cultivation. The Tobacco Board has sometimes told them about phasing out of tobacco over the years. Higher costs of cultivation, health

problems, news about government's plans to reduce tobacco and labour problems were the most important reasons that the farmers felt could motivate them to shift. There is also a cloud of uncertainty among tobacco growers with regard to future of tobacco cultivation.

Area dynamics under predominant crops in Prakasam district

The dynamics of area substitution between different crop groups explains how the area has shifted among the competing crops over the years. In Prakasam, the major tobacco-growing district of Andhra Pradesh, we have analysed the crop substitution between tobacco and other predominant crops during recent years. The purpose is to find out the alternative crops, which are emerged in place of tobacco. The spared area of tobacco has mainly shifted to pulses (red gram, black gram and green gram) followed by the chilli, and fodder crop (cowpea). However, chickpea in the major pulse crop, the area has not shown an increase during the recent period. This might be due to area substitution has taken place among pulse crops. On the other hand, the area under tobacco has reduced considerably by 29.0 thousand ha (from 70.0 thousand ha to 41.0 thousand ha) during the corresponding period. Largely, 26.8 thousand ha (91.5 percent of the reduced tobacco area) is replaced by the pulses, chilli and fodder crop in this district (Table 2). This indicates farmers have opted for alternative crops based on their own knowledge and farming experience over the years and market conditions. Therefore, there is abundant scope in tobacco growing regions for the cultivation of alternative

Table 2: Change in Area under predominant crops in Prakasam district (Area in '000 hectares)

| Years | Pulses | Chilli | Fodder Cowpea | Tobacco |
|---|--------------|-------------|---------------|--------------|
| 2015-16 | 159.5 | 34.8 | 8.3 | 48.6 |
| 2016-17 | 185.6 | 44.8 | 7.6 | 33.4 |
| Mean (1) | 172.5 | 39.8 | 8.0 | 41.0 |
| 2013-14 | 168.2 | 27.4 | 5.2 | 73.0 |
| 2014-15 | 151.9 | 27.5 | 6.8 | 67.6 |
| Mean (2) | 160.0 | 27.5 | 6.0 | 70.0 |
| Change in Area (Mean 1-Mean 2) | 12.5 | 12.3 | 2.0 | -29.0 |

Source: Directorate of Economics and Statistics, Govt of AP accessed on 10.12.2017

crops since they have demonstrated their adaptability to the local biophysical environment and existing market demand in the region.

Area dynamics under predominant crops in Nellore district

In Nellore district, we have analysed the crop replacement between tobacco and other predominant crops to know the alternative crops, which are emerged in place of tobacco during recent years. The spared area of tobacco has mainly shifted to pulses (green gram, black gram, chickpea and red gram) and the commercial crop (chilli). In contrast, the area under tobacco has reduced considerably by 5.6 thousand ha (from 11.8 thousand ha to 6.2 thousand ha) during the corresponding period. Mostly, 4.1 thousand ha (78.5 percent of the reduced tobacco area) is replaced by the pulses, and chilli crop in Nellore district. (Table 3). Therefore, there is ample scope in tobacco growing regions for the cultivation of alternative crops since they have demonstrated their adaptability to the local biophysical environment and existing market demand in the region.

Table 3: Change in Area under predominant crops in Nellore district
(Area in '000 hectares)

| Years | Pulses | Chilli | Tobacco |
|---------------------------------------|-------------|------------|-------------|
| 2015-16 | 42.6 | 1.6 | 8.2 |
| 2016-17 | 44.4 | 2.0 | 4.3 |
| Mean (1) | 43.5 | 1.8 | 6.2 |
| 2013-14 | 36.0 | 1.8 | 11.3 |
| 2014-15 | 47.1 | 1.4 | 12.3 |
| Mean (2) | 39.7 | 1.5 | 11.8 |
| Change in Area (Mean 1-Mean 2) | 4.0 | 0.3 | -5.5 |

Source: Directorate of Economics and Statistics, Govt of AP accessed on 10.12.2017

Area dynamics under predominant crops in West Godavari district

In West Godavari district, dynamics of change in tobacco production vis-a-vis other crops was analysed by increase in crop acreage during recent years. The crop replacement between

tobacco and other predominant crops has happened in this district. The spared area of tobacco has mainly shifted to maize and green gram during recent years. On the contrary, the area under tobacco has reduced substantially during the corresponding period. Overall, 5.1 thousand ha (86.3 percent of the reduced tobacco area) is replaced by the maize, and green gram crop in West Godavari district. (Table 4). Thus, there is sufficient space in tobacco growing regions for the cultivation of substitute crops since they have established their adaptability to the local conditions and existing market demand in the region. Hence, there is a prospect for the cultivation of these crops as a substitute to tobacco in order to realize the good economic returns.

Table 4: Change in Area under tobacco alternative crops in West Godavari district

| Years | (Area in '000 hectares) | | |
|---------------------------------------|-------------------------|------------|-------------|
| | Maize | Green gram | Tobacco |
| 2015-16 | 55.2 | 9.0 | 21.9 |
| 2016-17 | 56.5 | 9.7 | 20.6 |
| Mean (1) | 55.8 | 9.3 | 21.2 |
| 2013-14 | 51.7 | 7.4 | 26.5 |
| 2014-15 | 54.0 | 6.9 | 28.0 |
| Mean (2) | 52.9 | 7.1 | 27.3 |
| Change in area (Mean 1-Mean 2) | 2.9 | 2.2 | -6.1 |

Source: Directorate of Economics and Statistics, Govt of AP accessed on 10.12.2017

Partitioning of spared tobacco to other alternative crops in Andhra Pradesh

The portioning of spared tobacco area for different crops has shown significant variation across the districts of Andhra Pradesh. In Prakasam district, the majority of the spared area (29.28 thousand ha) is occupied by pulses followed by chilli, and cowpea. In Nellore district, the spared tobacco area (6.18 thousand ha) is largely shifted to pulses and chilli. In case of West Godavari district, the major share of spared tobacco area (5.55 thousand ha) is replaced by maize followed by the green gram (Table 5). The recent trends in the emergence of crop alternatives have shown that tobacco agriculture in Andhra Pradesh is

transforming from tobacco towards largely pulses, maize, and chilli. However, this transformation is not evenly distributed across the state because farmers preferred different crops in different tobacco growing regions of Andhra Pradesh. However, the shift has demonstrated to the farmers and policy makers that there are alternatives for tobacco and alternative crops from tobacco is possible through the strategy of crop size reduction.

Conclusions and Policy Implications

Promotion of alternative crops and livelihoods to millions of people involved in tobacco value chain is a challenging task. Apart from technical knowhow and biophysical environment, the responses in this regard should come from farmers such as, what to cultivate, what assistance they need to shift from tobacco to other alternative crops, is it the government policy, organised market, finance, infrastructure, farm inputs, irrigation and export promotion etc. In this direction, this paper has assessed the policy impact of crop size reduction in FCV tobacco in Andhra Pradesh during recent years. Subsequently, this policy decision has reduced FCV tobacco area largely, which has led to sparing of tobacco area for cultivation of other crops. Accordingly, farmers have chosen for alternative crops based on their own knowledge and farming

experience over the years and adaptability to the local biophysical environment in the region. The most significant observation is that crop substitution has taken place in major tobacco-growing districts during recent years with significant acreage. The farmers who are actual players in the field have a convinced mind-set and conditioned behaviour and conducive environment is additional aspect for development of crop alternatives. The substitution of tobacco area to other crops was clearly indicated with the emergence of alternative crops. The spared area of tobacco has mainly shifted to pulses, chilli, and cowpea in Prakasam, pulses, and chilli in Nellore and maize and green gram in West Godavari districts of Andhra Pradesh. Hence, policy-driven approach of reduction of crop size is one of the potential instruments to foster transition from tobacco to other sustainable crops with their own knowledge and experience and without looking into the formidable barriers that include issues of economic feasibility and institutional support, processing and marketing infrastructure and employment potential etc.

REFERENCES

- Central Tobacco Research Institute (CTRI). Vision 2050 Document. Indian Council of Agricultural Research, Rajahmundry, India. July 2013; pp 28

Table 5. Partitioning of tobacco area for alternative crops emerged in response to FCV tobacco crop size reduction in Andhra Pradesh

| Districts | Tobacco area spared (000 ha) | Partitioning of the spared area for other crops | | | |
|----------------------|------------------------------|---|---------------|-----------------------|---------------------|
| | | Alternative Crops | Area (000 ha) | Percent share of area | Order of Preference |
| Prakasam | 29.28 | Pulses | 12.5 | 42.7 | 1 |
| | | Chilli | 12.3 | 42.0 | 2 |
| | | Cowpea | 2.0 | 6.7 | 3 |
| | | Total | 26.8 | 91.4 | |
| Nellore | 6.18 | Pulses | 4.0 | 72.9 | 1 |
| | | Chilli | 0.3 | 5.6 | 2 |
| | | Total | 4.3 | 78.5 | |
| West Godavari | 5.55 | Maize | 2.9 | 49.3 | 1 |
| | | Green gram | 2.2 | 37.0 | 2 |
| | | Total | 5.1 | 86.3 | |

Source: Directorate of Economics and Statistics, Govt of AP accessed on 10.12.2017

- Hand Book on Tobacco in India: *Importance & Policy Challenges*, Tobacco Institute of India, March 2017, New Delhi
- Nayanatara Nayak. 2015. Alternatives to Flue Cured Virginia Tobacco Cultivation: Preliminary Observations from a Tobacco Growing Region in India, Centre for Multi disciplinary Development Research (CMDR), Dharwad-580004, India. Current **Agril. Res. J.** 3(1): 26-41
- Panchamukhi, P.R. 2000. Agricultural Diversification as a Tool of Tobacco Control, Working Paper No.-6, Centre for Multi-disciplinary Development Research, Dharwad, Karnataka State, India
- Reports on districts wise crop wise production, (2015-16), Directorate of Economics and Statistics, Government of Andhra Pradesh
- Srivatsava, S.K., N. Sivaramane and V. C. Mathur. 2010. Diagnosis of pulses performance of India. **Agril. Econ. Res. Rev.**, 23: 137-148
- The WHO Framework Convention on Tobacco Control: an overview, WHO -FCTC, January 2015
- Various Annual Reports, Tobacco Board, Department of Commerce, Ministry of Industry and Commerce, Government of India