

## **IMPACT OF NATIONAL FOOD SECURITY ACT (NFSA) ON THE INDIAN ECONOMY: AN APPLICATION OF MODIFIED LEONTIEF AND GHOSH MODEL**

Topic: Impact Analysis: Multipliers

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In September, 2013 the Parliament of India passed an act called “National Food Security Act (NFSA)”. The act has stupendous importance for a country like India which is long suffering from problems like hunger and starvation. But the implications of this act are not yet fully known. Counter arguments suggest that NFSA would exert inflationary pressure to the country’s economy. In this perspective, we have tried to measure four aspects of NFSA using Input-Output framework. Firstly, the required production and growth rates of different sectors of the economy to match the extra demand of food grains by the Government. Secondly, the required production and growth rates of different sectors of the economy to achieve growth target of food grain during 2016-17, as mentioned in the 12th Five year Plan of India (Planning Commission, Govt. of India). Thirdly, we measured the impact on price due to the adoption of NFSA. Lastly, we also estimate the additional water requirement to meet the extra demand for food grains.

A modified IO model has been used to capture the NFSA impacts on the Indian economy.

The most suitable methodology to capture knock-on effects of output change in an inter-dependant industrial scenario is Input-Output framework. Both demand driven Leontief model and supply driven model of Ghosh have been applied to evaluate the impact of NFSA. The direct and indirect linkage effects could be captured under this methodology to analyse sectoral impacts of output change. We have considered Input-Output Transaction Table (130X130) of 2007-08 published by Central Statistical Organisation and suitably aggregated 130 sectors into 23 broad categories.

We have assumed that the earliest when the effects of Food Security Act would be perceivable would be 2016-17. The result shows that the food grain sector has to grow by 3.75% annually to match provision of food grains according to the norm set by the act. Apart from that few sectors has to grow in higher percentage compared to the rest of the economy. These sectors are: Chemicals and Chemical Products, Mineral Fuels, Live stock products and Other Oilseeds and crops. The other sectors which need to gear up significantly to supplement this growth are Chemicals & chemical products, Mineral Fuels and Live Stock Products. From supply side the important sectors are: Other Oil seeds and crops, Food products and livestock products.

Impact on prices due to imposition of food security bill has shown that the food grain inflation would remain as high as 8.36%, even if the productivity in agricultural production increases significantly. For rest of the sectors the inflationary impact will be minimal with some effect on: Miscellaneous Manufacturing Products, Electrical & Electronics Equipments, Non-Electrical Equipments, Precision Tools and Chemicals & Chemical Products. Additionally, our analysis showed that with very prudent planning and field level application, India can meet its food demand provided it commits to work on water security.

To implement Food Security Act, the production structure of Indian agricultural sector has to be revised thoroughly. What is needed would be increase in productivity rather than increase in production. Secondly, given the same size of cultivable land, the productivity has to improve substantially. For this to happen, use of fertilizers, pesticides, more intense irrigation and modern agricultural equipments would be required. Thirdly, since in India, most of the farm sizes are small and fragmented, the productivity might have reached a saturation point where no significant improvement in productivity is possible. In this case, the only option left is to supplement “Food Security Act” by import food grains. But that would result in huge burden on country’s exchequer. Fourthly, there could be a re-allocation of farm land from non food grain to food grain sector. But that may have negative repercussion on availability of non-food grains and cash crops like tea, jute, rubber etc. This would again have a negative impact on country’s exchequer, as most of the

non-food items are exported. Fifthly, replacing cultivation of cash crops by food grains is not always feasible. It depends a lot on the texture of soil, its fertility and local climate. Sixthly, there would be always a tendency of increase in food grain prices. This inherent tendency could surmount any attempt to control it by Government or any other agency. Lastly, the inflationary pressure would not be confined within the periphery of agricultural sector rather it would spread to other sectors which seemingly do not have any relation to food grain production, for example "Precision Tools". In a nutshell, in this paper we have tried to throw some lights into possible macroeconomic impacts of NFSA on the Indian economy.