

Implications of Agricultural Subsidies Since Green Revolution: A Case Study of Indian Punjab

Authors : Kriti Jain, Sucha Singh Gill

Abstract : Subsidies have been a major part of agricultural policies around the world, and more extensively since the green revolution in developing countries, for the sake of attaining higher agricultural productivity and achieving food security. But entrenched subsidies lead to distorted incentives and promote inefficiencies in the agricultural sector, threatening the viability of these very subsidies and sustainability of the agricultural production systems, posing a threat to the livelihood of farmers and laborers dependent on it. This paper analyzes the economic and ecological sustainability implications of prolonged input and output subsidies in agriculture by studying the case of Indian Punjab, an agriculturally developed state responsible for ensuring food security in the country when it was facing a major food crisis. The paper focuses specifically on the environmentally unsustainable cropping pattern changes as a result of Minimum Support Price (MSP) and assured procurement and on the resource use efficiency and cost implications of power subsidy for irrigation in Punjab. The study is based on an analysis of both secondary and primary data sources. Using secondary data, a time series analysis was done to capture the changes in Punjab's cropping pattern, water table depth, fertilizer consumption, and electrification of agriculture. This has been done to examine the role of price and output support adopted to encourage the adoption of green revolution technology in changing the cropping structure of the state, resulting in increased input use intensities (especially groundwater and fertilizers), which harms the ecological balance and decreases factor productivity. Evaluation of electrification of Punjab agriculture helped evaluate the trend in electricity productivity of agriculture and how free power imposed further pressure on the extant agricultural ecosystem. Using data collected from a primary survey of 320 farmers in Punjab, the extent of wasteful application of groundwater irrigation, water productivity of output, electricity usage, and cost of irrigation driven electricity subsidy to the exchequer were estimated for the dominant cropping pattern amongst farmers. The main findings of the study revealed how because of a subsidy has driven agricultural framework, Punjab has lost area under agro climatically suitable and staple crops and moved towards a paddy-wheat cropping system, that is gnawing away the state's natural resources like water table has been declining at a significant rate of 25 cms per year since 1975-76, and excessive and imbalanced fertilizer usage has led to declining soil fertility in the state. With electricity-driven tubewells as the major source of irrigation within a regime of free electricity and water-intensive crop cultivation, there is both wasteful application of irrigation water and electricity in the cultivation of paddy crops, burning an unproductive hole in the exchequer's pocket. There is limited access to both agricultural extension services and water-conserving technology, along with policy imbalance, keeping farmers in an intensive and unsustainable production system. Punjab agriculture is witnessing diminishing returns to factor, which under the business-as-usual scenario, will soon enter the phase of negative returns to factor.

Keywords : cropping pattern, electrification, subsidy, sustainability

Conference Title : ICGRASG 2021 : International Conference on Green Revolution and Agriculture for Sustainable Growth

Conference Location : Lisbon, Portugal

Conference Dates : September 20-21, 2021