

A Study on the Share of Agriculture in Indian GDP

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Abstract

Agriculture is the backbone of Indian Economy. About 65% of Indian population depends directly on agriculture and it accounts for around 22% of GDP. Agriculture derives its importance from the fact that it has vital supply and demand links with the manufacturing sector. During the past five years agriculture sector has witnessed spectacular advances in the production and productivity of food grains, oilseeds, commercial crops, fruits, vegetables, food grains, poultry and dairy. India has emerged as the second largest producer of fruits and vegetables in the world in addition to being the largest overseas exporter of cashews and spices. Further, India is the highest producer of milk in the world.

Introduction

Agriculture in India is in the hands of millions of peasant households, a bulk of which comprise tiny land holdings with preponderance of owner cultivation [1]. There is hardly any direct government intervention in the production and investment decisions of the farmers but the government does influence the legal, material and economic environment in which farmers operate (Vaidyanathan 1996). Though tremendous progress has been made to exploit irrigation potential in the country still two third of area under cultivation is unirrigated and there is thus heavy dependence of production on vagaries of nature i.e. rainfall. Irrigated areas have experienced sharp increase in productivity level and large part of output at such farms is for market. On the other hand, productivity in unirrigated areas has remained either stagnant or experienced very small growth and most of the farmers in such areas produce for subsistence purpose [2].

At overall level, agricultural growth remained slow (below 3 percent) in the Country. Apart from that, agricultural growth remained confined to a few well endowed pockets which has created regional disparities.

STRUCTURE OF INDIAN AGRICULTURE:

India's agricultural area is vast with total arable and permanent cropland of 170 million hectares in 2003-2005. It has the second largest arable area in the world after the United States. OECD in its 2007 agricultural policy monitoring report notes that Indian agriculture is dominated by a large number of small scale holdings that are predominantly owner occupied.

The average size of holding in the late nineties was about 1.4 hectares and continues to decline, as farms are usually divided on inheritance [3]. Out of India's 116 million farmers, around 60% have less than 1 hectare and together they farm 17% of the land. The share of medium to large farms (above 4 hectares) is very small at just over 7% of all holdings, but these farms account for around 40% of the land. The implication is that many of the very small farms are subsistence holdings, with low investment and little productivity growth.

Objective of the Project:

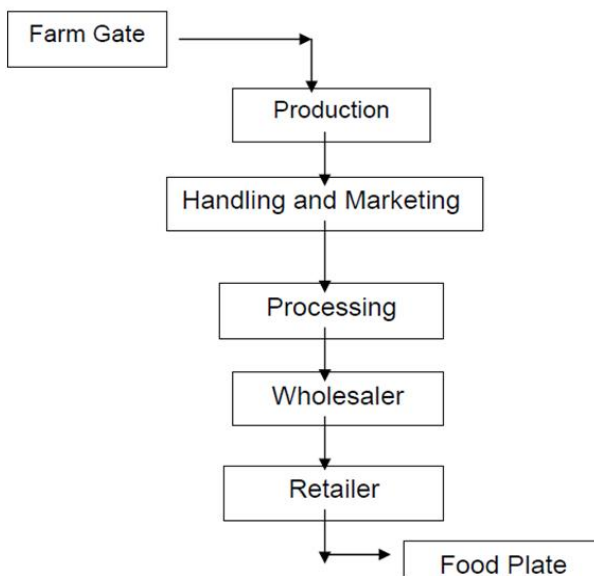
- i) To find out factors affecting growth of agriculture sector.
- ii) To find out the effects of decline in agriculture sector on the Indian economy.

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iii) To find out solutions for the revival of Indian agriculture sector after analyzing different Interventions adopted in India and different countries.

iv) To find out how Agro-Marketing can help in the revival of Indian agriculture sector and how to use it for overall change in the agriculture sector?

Agricultural Chain



Marketing of Agricultural Products:

Form of Markets exists in India:

Agricultural markets in India are dominated by the existence of unorganized and unregulated agricultural mandies with the presence of a large number of middlemen and widespread prevalence of malpractices. Absence of proper warehousing facilities in the villages, lack of proper transportation facilities and infrastructure such as rails and good quality all weather roads and ignorance about the market prices of their products are some of the important factors for exploitation of farmers from middle men. They are forced to sell their products to these middlemen at the farm gate at throwaway prices.

Agricultural Market Reforms in India:

Ministry of Agriculture had formulated a model law on agricultural marketing in consultation with State/Union territory Governments to bring about marketing reforms in line with emerging trends. This model act enables

establishment of private markets/yards, direct purchase centers, consumers/farmers markets for direct sale, and promotion of public- private Partnership (PPP) [4] in the management and development of agricultural markets in the country. It also provides for exclusive markets for onion, fruits, vegetables, and flowers.

Regulation and promotion of contract farming arrangement has also been made a part of this legislation. A provision has also been made for constitution of State Agricultural Produce Standard Bureau for promotion of grading, standardization, and quality certification of agricultural produce. So far, 15 States and 5 Union Territories have amended their Agricultural Produce Marketing Committee (APMC) Act to derive the benefits of market reforms.

E-Chaupal:

E-Chaupal is a business platform consisting of a set of organizational Subsystems and interfaces connecting farmers to global markets. It has been initiated by International Tobacco Company (ITC) who are quite active in agricultural sector in India. This e-chaupal business platform consists of three layers each of different level of geographic aggregation. Each of the three layers is characterized by three key elements:

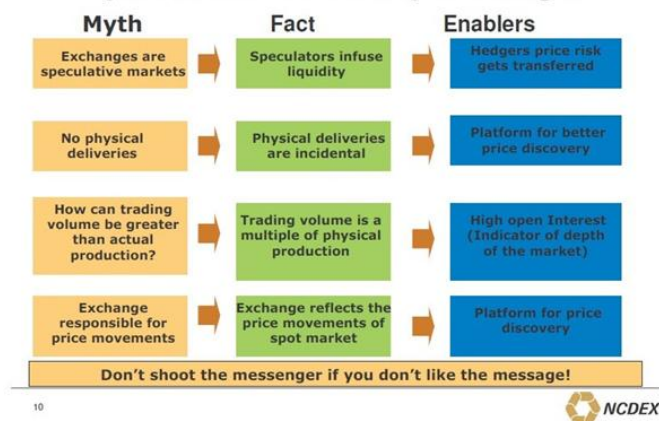
1. The infrastructure (physical or organizational) through which transaction takes place.
2. The entity (person or organization) orchestrating the transactions, and
3. The geographical coverage of the layer.

The first layer consists of the village level kiosks with internet access (e- chaupals), managed by an ITC trained local farmer and within walking distance (I-5 kilometers) of each target farmer. Each cluster of five villages gets an e-chaupal, which is justified by sparse population in rural India. The second layer consists of a brick and mortar infrastructure called hubs managed by the traditional intermediary who has local knowledge/skills called a Samayojak and within tractorable distance (25- 30 kilometer) of then target farmer.

Agricultural Commodities Exchanges:

To introduce future trading in agricultural commodities in India, two commodity exchanges have been introduced in 2003 for future trading. They are, National Commodity & Derivatives Exchange Limited (NCDEX) and Multi Commodity Exchange of India Limited (MCX). These exchanges are majorly dealing in agricultural commodities. They are involved in forward trading to mitigate price risks of the farmers.

Myths about commodity exchanges



International Trade & Indian Agriculture:

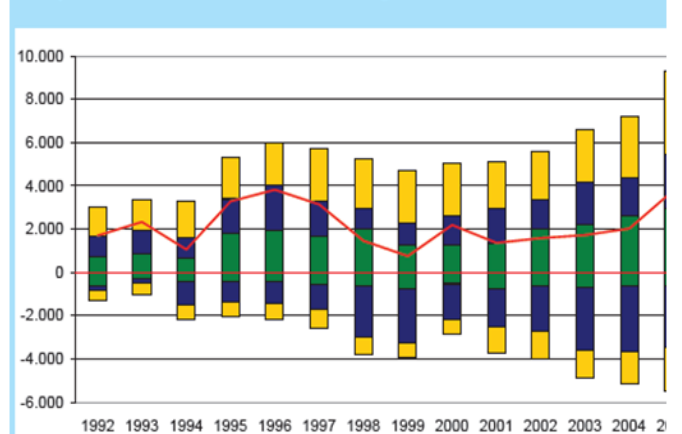
Agricultural Export: India's total exports of agricultural and allied products at \$10.5 billion in 2005-06 constitute 10.2% of its export share. Developed country markets account for nearly 35% of India's agri-exports. In agricultural exports there are varied performances across commodities. Contribution of various agricultural commodities in world exports has been listed below.

*Source: NCTI based on UN-ITC Trade Map Data.

Export of Marine products, which after a decline in 2003-04 had picked up in subsequent years, grew by 6.3% in April- October-2006. In terms of export earnings, among marine products, frozen shrimp contributed to be the largest export item, followed by frozen fish, Product Percentage share in World Export :Lac, gums, resins, vegetable products 10 Vegetable planting materials, vegetable products 4.9 Coffee, tea, mate & spices 3.7 Marine products 2.3 Residues, waste

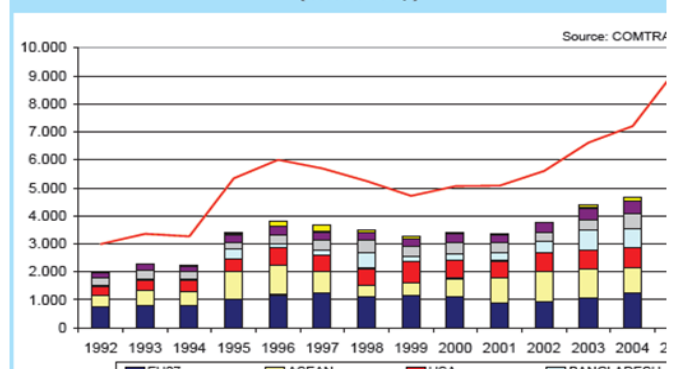
of food industry, animal fodder 2.1 Cereals 1.3 Fruits & nuts 1.1 cuttlefish, squid, and dried items. European Union accounted for the largest share of India's export of marine products, followed by US and Japan. This sector, however, faced a number of hurdles in the major export destinations [5]. Indian shrimp imports to USA have been subject to anti dumping duty of 10.17% from August 2004. In European markets, India's marine products have been facing problem due to multiplicity of standards-in addition to the EU's own standards, the standards of each of the own member states.

Graph 3: Structure of Indian agricultural trade (million)



Agricultural Imports and Exports:

Graph 4: Indian agri-food exports by destination (million \$)



Agricultural import contributes about 3% in total merchandise import to India. Major imports during April-October 2005 included vegetable oils (US\$ 1237.3 million), raw cashew nut (US\$ 287.8 million),

pulses (US\$ 281.8 million) and sugar (US\$ 138.7 million). Vegetable oils and pulses are largely imported to augment domestic supplies and raw cashew is imported for processing and re-exports, as domestic production is not adequate to meet the demand of processing capacity installed in the country. L Agri Export Zones: In the Export Import (EXIM) Policy 2001-02, the Government of India announced the proposal to set up Agri-Export Zones for the purpose of developing and sourcing raw materials and their processing/packaging leading to final exports. The concept essentially embodies a cluster approach of identifying the potential products and the geographical region in which such products are grown and adoption of an end to end approach of integration of the entire process, right from the stage of production to consumption [6].

NEW AGRICULTURAL POLICY AND CHALLENGES IN INDIAN AGRICULTURE:

The challenges facing Indian agriculture can be grouped in four categories relating to:

- (1) Growth
- (2) Sustainability
- (3) Efficiency and
- (4) Equity.

Sustainable agriculture:

The policy aims to promote technically sound, economically viable, Environmentally non – degrading and socially acceptable use of country’s natural resources – land, water and genetic endowments. This indeed is a tall order [7].

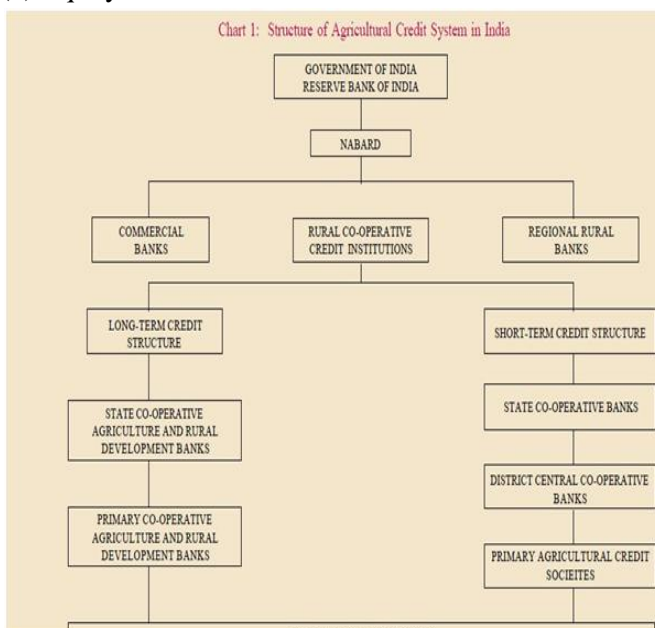
Land Resources:

Status of land resources of India is presented in Table 3. Out of 304.9 million hectare area for which land use information is available item 1 and 2 cannot be considered for biotic production. This leaves 264 million hectare area that can be considered for some sort of biotic production. Out of this 142.2 million hectare area is under cultivation. The challenge relating to this land area is to maintain its fertility status and protect against degradation due to soil erosion, chemicalisation, waterlogging and salinisation and alike problems. In the remaining area, sum of items 6 to 10 can be taken to represent maximum wasteland area, assuming forest with poor cover and permanent pasture and grazing grounds are more or less bereft of vegetative cover.

This comes to 79.5 million hectare which is more than half of the size of area under cultivation. NAP proposes to put this so called wasteland to use for agriculture and afforestation, but it does not elaborate any strategy to do so. Most of this land requires heavy capital investments to make it productive. Such investments can either come from corporate sector or from government but serious apprehensions have been expressed to allow corporate sector to control these lands.

Enough care is also needed to ensure that some proportion of common property waste lands remains around all habitation to serve the community needs and needs of resource poor rural populace. Some innovative mechanisms like leasing such lands to local households needs to be evolved to make productive use of wastelands.

Chart 1: Structure of Agricultural Credit System in India



Water Resources:

Water resources are becoming extremely scarce as demand for water for Agricultural, industrial and household uses are increasing rapidly. It is often quoted that future wars would be fought over water and water would be the source of maximum local conflicts. As India has only 4 percent of world water resources and 16 percent 11 share in population (Iyer 2001) water scarcity is more acute in the country compared to world average. The pressure on water resources is increasing with population growth, Urbanization and improvement in living standard.

According to some scholars availability of ground water for irrigation would emerge as a critical bottleneck for self sufficiency in food grain by the year 2020 as demand for irrigation would exceed its availability by nearly 30 percent (Chopra and Golder 2000). Similarly, National Commission for Integrated Water Resource Development Plan has projected that requirement for irrigation water in India would grow by more than 50 percent by 2050. Evidence is accumulating that water table in several states is getting depleted at a fast rate. Based on various assessments it is concluded that even after fully exploiting available water resources water supply can match the demand only if there is a big improvement in efficiency of irrigation

Plant and Animal Genetic Resources:

NAP expresses concern about the narrowing and erosion of India's plant and genetic resources in the last few decades. Here two important concerns are missing. One; NAP does not stress quality improvement in livestock through use of better quality indigenous germplasm. There is strong fascination in the country for exotic germplasm, particularly of cattle, at the cost of ignoring rich germplasm of domestic Breeds for improving productivity and quality of livestock.

Experience of cross 12 breeding with exotic stocks of cattle is showing its own hazards in some areas where infertility among cross bred is leading to hordes of stray

cattle in the countryside. Two, there is not enough awareness about breeding aspects in the country. Often same bull continues to be used in one locality for lifetime which results in inbreeding and genetic decline. There needs to be some guidelines with Panchayati Raj institutions for taking care of healthy breeding practices.

Food and nutrition security:

Food and nutritional security has remained central to India's agricultural and development policy since Independence. However, importance being accorded to food and nutrition security has receded during 1990s because of two reasons. One, there was accumulation of very large stock of grains in government stock after April 1998 which had posed very serious problem of disposal in domestic and international market.

This has also caused serious burden on state exchequer. If India had not experienced very severe drought during the year 2002, which caused 14 percent (30 million tonne) decline in food grain production, then country was going to have tough time to clear Excessive stock of grains. Two, all kind of reduction in cereal consumption is being wrongly attributed to phenomenon of dietary diversification which involves structural shifts in demand from cereal to horticultural and livestock feed, without distinguishing between diversification by choice or diversification under distress. A closer look at the household consumption data and macro data on availability of cereals for consumption reveals very disturbing trend in food and nutrition security during 1990s. It is found that per capita energy and protein intake declined very sharply during 1990s and percent of population getting energy and protein below the minimum threshold level has increased.

Main implication of these findings is that growth in food production should not be accompanied by increase in per unit costs. Thus, sustaining nutrition and food security require reduction in average cost of food grain production in real terms.

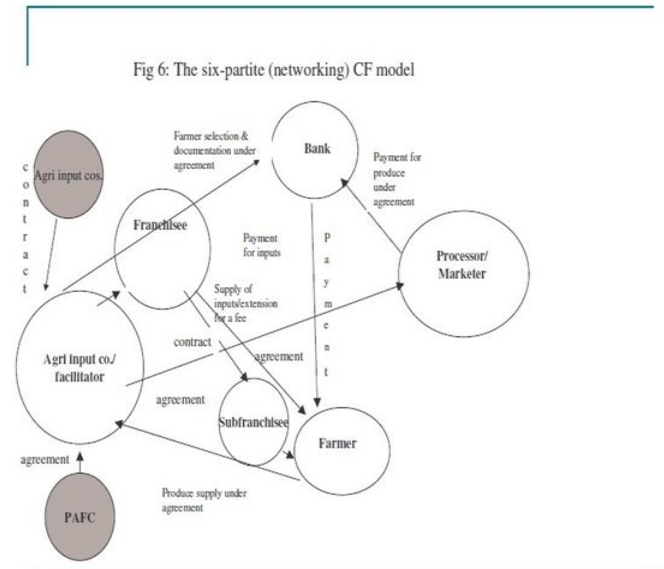
Crop husbandry:

The MSSRF report discusses developments in the crop husbandry sector, where the varietal improvement programme has been identified as the catalytic technology. The ICAR system, with its elaborate network of research activities, has developed and released more than 3300 high yielding varieties and hybrids pertaining to various crops¹. A detailed analysis of the nature and extent of development of the varietal improvement programme has been undertaken with regard to some selected crops: rice and wheat among major cereals, maize and sorghum among nutritious millets, soybean and sunflower among oil seeds, potato among vegetables and sugarcane and cotton among non-food crops. The most important aspect of the varietal improvement programme in India is that the germplasm received from international research institutions has been used to develop varieties suitable for Indian conditions.

Irrigation:

The study has provided an overview of irrigation development since the 1950s and examined the role of technology in irrigation development. Expansion of irrigation in the country is in part related to a conscious policy decision of the government to invest in irrigation works and in part to development of technologies. Several technologies, major and minor, have played a crucial role in the development of irrigation in the country with regard to harnessing, distributing and managing water resources as well as in conserving and quantifying available water. The design and construction of dams in India have undergone several modifications based on new scientific inputs and experience over the years. Technology has enabled construction of large dams even in areas susceptible to seismic activity, which is a major breakthrough, particularly with regard to the flood-prone northeastern states. As regards sub-surface irrigation, highspeed drilling technology has replaced traditional, shallow dug wells by modern, deep borewells in hard-rock areas.

PROBABLE SOLUTIONS FOR THIS PROBLEM OF PRICE AND MARKETING:

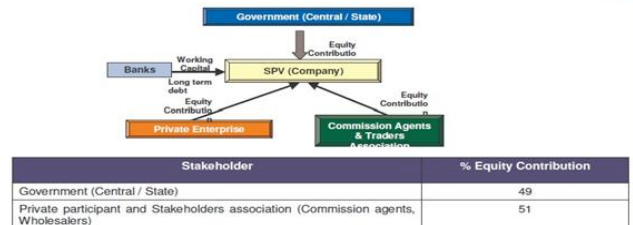


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Terminal Market: Proposed Ownership Structure



- Government funding can be in the form of direct funding / land
- Government can provide upto 49% of equity, returnable at par on successful operation of the project.

Agri Service Centers: Current Scenario

	ITC e-Choupal	Choupal Sagar	DSCL Hariyali Kisan Bazar	Tata Kisan Sansar	Mahindra Shubhlat
Value proposition	Information, services, procurement, products sale	Farm and non-farm products, Procurement	Agri-inputs, technical guidance, crop finance, petrol retailing	Agri-inputs, agronomic services.	Agri-inputs, farm management solutions
Geographic reach	MP, UP, Rajasthan, Karnataka, AP, Maharashtra. 31,000 villages, 3.1mn farmers.	MP	Punjab, Rajasthan, UP	UP, Punjab, Haryana, 14,000 villages	TN, Rajasthan, Punjab, MP, Maharashtra, C
Revenue streams	Procurement, sale of agri-inputs, farm machinery, edible oil/semi durables, rentals.	Procurement, selling of consumer goods and farm inputs, services.	Farm inputs. On the anvil- personal products, staples.	Agri-inputs, rentals, services	Farm inputs, re on equipment, management advisory
Investment/outlet	Rs.1 to 5 lakh/e-choupal	Rs.2-4 crores	Rs.1crore	-	-
Land area		On 8 acres of land, 15 people per store	On 2.5-3 acre, 6-7 persons per store	Store area: 800-1200 sq. feet	Store area-200 Warehouse-1000sq.ft.



FURTHER SUGGESTIONS:

If we go behind the objective facts, we would find that the fundamental obstacle to any scheme of agricultural improvement in this country is the ill-health, sloth and inertia of the cultivator. The ill-health of the cultivator is due partly to his ignorance and the insanitary conditions under which he lives (it is well-known that public health measures are still in a rudimentary stage of development in this country) and partly to his extreme poverty and consequent malnutrition. His sloth and inertia, on the other hand, are the results of years of habit coupled with the belief that what* ever he does to improve production, owing to the curious interplay of certain social and economic forces, he himself shall never be able to reap the benefit thereof.

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