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Marketing Strategies of Rural Industry in India

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ABSTRACT: In rural areas, the business operates towards different industries, which are agriculture, forest, and handloom industries. The people lived in different areas of rural India master in unique skills. Such as the rural people living in Kerala, they have professional skill in carving wood, the other rural people proficient in weaving carpet live in Kashmir, there are various skills from place to place is because of the factors of resources and traditions.[3] Besides, in India, the agricultural is vital for the economy because it accounts for 44.5% of GDP[4] from 1970 to 1971 and offers 68% of rural employment. However, the agriculture sector shrunk to 16.1% of GDP in 2009 while the proportion of non-agricultural industry achieved 86% of the GDP.[5]

A rural enterprise refers to a company registered in the rural areas, was under the responsibility of the Department for Environment, Food and Rural Affairs.[6] The reasons for business operating in the rural area are favorable factors such as the appealing dwelling, fresh air, bigger extend headroom, cheaper rental fees, and harmonious relationships with labor. In India, there are still many people living in rural areas.[7] Furthermore, There are approximately 90% of employees are residents who work in an assigned area in the countryside and aim to increase the local economy. The purpose of increasing in rural economy is to make fewer people living under the poverty line.[7] The joint family structure is predominant as the strong kinship relationship in India.[8] Therefore, to assure that there are lucrative employment opportunities in rural India, the intervention of the plan is needed.[7] For example, the Mahatma Gandhi National Rural Employment Guarantee Act has been promulgated to increase the opportunities for wage employment.[9]

KEYWORDS: rural,marketing,strategies,India,economy,business,resources,traditions

INTRODUCTION

In a different historical time, the performance of agriculture has a discrepancy, at the beginning of the green revolution, between the 1970s and 1980s, the growth rate of agricultural remains high in Uttar Pradesh. In the 1990s, the substantial loss is suffered by the farm economy as the growth space brings by the Green revolution may be used up. Such as the decline in the outputs of Cereal crops, wheat, and groundnuts. After the period of the liberalization, the growth of the food grains stayed behind the increase in the population between 2000 and 2001 and the Total factor productivity show a decreasing trend from 1993[10] The rural economy with slow growth pace has developed to a high-speed growth economy after the liberalization in economic and the improvement in the facilities. Between 1990 and 1991, the launch of new economic policies leads to a decline in the output of food grains and an increase in non-food crops such as cotton. The location of 61% of the total enterprises is in rural areas, as stated in the 2005 Economic Census Report.[11]

Types of rural industries

Agriculture Industries

The agriculture industry is crucial as it solved the subsistence of the 2/3 of the population in the field study at Ambedkar Negar district, in which, the labor force of India accounts for 52%, and this sector made the contribution of 15.7% of the Gross domestic product between 2008 and 2009.[12] The majority of the National economy is contributed by the agricultural industry.[7] The job of people who lived in rural India is still mainly engaging in agricultural.[7] Nevertheless, it also found that the agricultural has a receding proportion in the GDP. There are approximately 91% of the population in the 13 selected villages in India works associated with farming, among these, over 86% are the small and marginal farmers who have an achievement of cultivating 75% of the total arable land.[12] Besides, The agrarian economy mainly comes from the little area and marginal and small land possessed by farmers. However, there are still some factors such as the advent of diseconomies caused by the liberalization agenda,[12] the downward trend of the share of the land, the limited job opportunities and production possibilities may lead to the livelihood under the line of poverty. Finding the sources or crops that can generate incomes and trying to satisfy the need of the consumers is needed to sustain their daily life. The sources or crops that can generate incomes and trying to satisfy the need of the consumers is needed to sustain their daily life.[13] For example, the commercial products (milk, vegetables, and fruits) are the sources that can be traded in markets and are required by the residents as secured food. Besides, the small and medium farmers are more likely to foster diversified resources with catering the demand such as the grains, fibers,

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and oilseeds, which makes more profits. Therefore, many farmers made a transformation from farm to non-farm agriculture businesses. For instance, there are roughly 66% of the peasant engaged in non-traditional agricultural enterprises.[13]

Forest Industries

logging teak in India

The forest industry traditionally produces two primary resources, which are timber and non-timber forest products (NTEPs). The fuelwood plays a crucial role among the forest products as it taking up more than 35% average forest income in the selected 27 villages around the Jharkhand in India. Besides, the forest income is significant because it made 12% to 42% increases to the village economy, and it is the dominant source of income in HFLA and HFHA villages. From which, it would alleviate the livelihood burden of households. It is using the majority of the firewood in the rural family as a source for heating in the selected villages in Jharkhand. Thus, less than 10% of the fuelwood for trading. Apart from the firewood, there is another forest product also very valuable, which is NTFPs.[14] The timber uses for producing furniture and equipment.

In contrast, the NTFPs encompass the products that can use in different areas, such as the medicinal plants for healing, some specific plants used in making cosmetics. Furthermore, NTEPs is one of the oldest product in trade. For instance, in the 12th century AD, there is trade in sandalwood oil and Arabic gum. Thus, it contributes to the local economies that started from the early days. Nowadays, the Baiga tribal in India still lives to rely on the NTFPs as the source for living and income. Moreover, it also stated that NTFPs has intangible values such as in many cultures, specific Forest area is sacred. Therefore, the function of the NTFPs also can be related to religion, not merely on the trade and the products.[15]

Hand loom industries

Sambalpuri Ikat weaving loom (Tanta) from Odisha

The hand loom industries in Odisha state, India is followed by the agriculture sector in terms of the contribution of the employment, which maintained the livelihood of the weavers in the low class. In rural India, the Bastralaya handloom cooperative produces traditional clothes (sarees, lungis) and household's products (bed cover) with dyeing Yarns. There is a tradition in India, when the advent of the Nuakhai festival, the handloom items will be sent between family members. Also, women will wear a sari to dance during this festival. Furthermore, there is a complicated braid art called Ikat, which weaving prominent patterns on the silk with using environmentally friendly colored threads. Furthermore, while carrying on the orders, the quality of the product is strictly controlled, such as if the weaver did not meet the standard criteria in terms of the dimension of the sari, the cash fined will be required after rigorously check. Weavers in this industry should possess Textile skills,[16] learn new knowledge through regular activities and observe the needs of the customer such as the color they preferred for the sarees, these competencies with the help of Bastralaya company will improve social-economic. Thus, the Bastralaya commit to bringing more earnings for weavers.[17]

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Structure of rural enterprise

A Joint family enterprise in India has a dominant place due to the concept of family and the incentives of the economic benefits.[18] The Joint family encompasses two types of family, which are patrilineal and matrilineal.[19] Besides, the partnership between the family members or relatives with the same caste and sub-caste will bring significant start-up capital and assistance from relatives to solve the issue, such as handling all of the business simultaneously. Besides, another predominant reason for this form of partnership is the concept of unity in a kinship, which is a cherish perception relate to the immediate family or Distant Relatives as partners. For example, 23 partnership ventures have a corporation with family members in the total of the 48 enterprises in the selected two villages at Gujarat, West India. However, even if the strong sense of unity as a family but the conflicts may appear eventually, and sometimes the certain activities need different nature of the collaboration. Therefore, it could happen that the partnership established outside of the joint family.[8]

Rural enterprise in India

In India, there are different forms of rural enterprises, which are community-based organizations, self-help groups, and cooperatives, these companies are beneficial for the rural economy due to the job opportunities created. However, there are some challenges for enterprise in rural India, such as the limited assets, inadequate skills and labors, unsteady communication system, and weak transport infrastructure. These are obstacles for enterprises in rural areas to be enlarged to a higher-value market. Also, the deficit of knowledge on promoting the product may lead to the proposition of improper decisions. For example, India rural enterprise has a reliance on the traditional experiences to thrive on, such as the weavers in Sambalpuri Bastralaya Handloom cooperative society limited obtained basic knowledge from parents and community.[17] Therefore, the appearance of e-commerce is to solve these issues. For instance, Anand Milk Union Limited is an India dairy cooperative; it applied the e-business in rural India to gain a robust supply chain, eliminate transport obstacles, and have a good relationship with customers.[20]

Rural cooperatives in India

'thrift cooperative' in Mulukanoor, India

Cooperatives in India is on behalf of one of the most extensive system in terms of rural finance in the world. Agricultural cooperatives in India still have excellent scope for improvement with the changing economy.[7] Through reaching a large number of clients, farmers (small and marginal farmers),[21] and people under the poverty line, it can be seen that rural cooperatives have an essential role in the hinterland of rural areas.[22] There are approximately 450,000 cooperatives in India with 220 million people involved.[7] Cooperatives originated from the twentieth century, and at an early stage mainly catered to the financial needs of the farmer, especially the advent of harvesting and sowing. Today, the cooperatives are responsible for the majority of rural credit, which constitutes 65%.[7] Under the different types of cooperatives in India, the credit cooperative is a powerful system in India, which encompasses the organization of the rural credit cooperative. In the villages of India the other types of cooperatives found are societies of farmer service and multipurpose society for large-scale agriculture.[22] Rural Cooperatives also engaged in distributing quality inputs to farmers by charging maximum price through the activity of procurement.[7] The dairy cooperatives in rural India help women become involved in the production of milk, acquiring confidence, more specifically, concerning the success of the Amul experiment.[7] Pravaranagar Cooperative Sugar industry is another successful example as the contribution to the development of the social-economic rising in the economic benefit and the improvement of rural facilities, which are inclusive of the areas of education, recreation center, hospitals, and cooperatives.[7]

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Rural self-help groups

Self-help group in India

The self-help group in India is an action taken in a group in a wide range, which helps approximately 33 million of Indian women to obtain financial services and other activities with lower prices. Women in rural India, especially with lower castes and lower education level, facing a plight such as the adverse health condition and limitation to acquire financial products.[23] There are commonly 10 to 20 members in a rural self-help group, who funded money mutually for the enterprise or emergency. For example, in Tamil Nadu, India. The new self-help groups established after the natural disaster.[24] One of the famous models launched in rural India is to provide microcredit to poor Indian women.[25] The initiatives of rural development in India concentrate on the development of the economic status of women and other vulnerable people by providing micro-credit.[23] Besides, there is another model not only offer the Microfinance plus[25] but also involved in the areas of education, social attendance, and politics. The self-help group has ethical implications for Indian women, such as alleviating the economic burden and eliminating gender inequality. After accessing the loan products, there is an improvement for rural women in the aspects of psychological and economic conditions.[23] Moreover, women who are widowed will receive support.[24] In South India, the large proportion of rural women, especially widows, experienced poverty, uncertainty in the inheritance of land, and barriers of involving in community.[23] The existence of the rural self-help group is to empower the vulnerable group, especially women, to conquer the barriers.[23]

DISCUSSION

Indian agriculture after independence

Despite some stagnation during the later modern era the independent Republic of India was able to develop a comprehensive agricultural programme.[51][52]

In the years since its independence, India has made immense progress towards food security. Indian population has tripled, and food-grain production more than quadrupled. There has been a substantial increase in available food-grain per capita.

Before the mid-1960s, India relied on imports and food aid to meet domestic requirements. However, two years of severe drought in 1965 and 1966 convinced India to reform its agricultural policy and that it could not rely on foreign aid and imports for food security. India adopted significant policy reforms focused on the goal of food grain self-sufficiency. This ushered in India's Green Revolution. It began with the decision to adopt superior yielding, disease resistant wheat varieties in combination with better farming knowledge to improve productivity. The state of Punjab led India's green revolution and earned the distinction of being the country's breadbasket.[53]

The initial increase in production was centred on the irrigated areas of the states of Punjab, Haryana and western Uttar Pradesh. With the farmers and the government officials focusing on farm productivity and knowledge transfer, India's total food grain production soared. A hectare of Indian wheat farm that produced an average of 0.8 tonnes in 1948, produced 4.7 tonnes of wheat in 1975 from the same land. Such rapid growth in farm productivity enabled India to become self-sufficient by the 1970s. It also empowered the smallholder farmers to seek further means to increase food staples produced per hectare. By 2000, Indian farms were adopting wheat varieties capable of yielding 6 tonnes of wheat per hectare.[16][54]

With agricultural policy success in wheat, India's Green Revolution technology spread to rice. However, since irrigation infrastructure was very poor, Indian farmers innovated with tube-wells, to harvest ground water. When gains from the new technology reached their limits in the states of initial adoption, the technology spread in the 1970s and 1980s to the states of eastern India — Bihar, Odisha and West Bengal. The lasting benefits of the improved seeds and new technology extended principally to the irrigated areas which account for about one-third of the harvested crop area. In the 1980s, Indian agriculture policy shifted to "evolution of a production pattern in line with the demand pattern" leading to a shift in emphasis to other agricultural commodities like oilseed, fruit and vegetables. Farmers began adopting im-

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proved methods and technologies in dairying, fisheries and livestock, and meeting the diversified food needs of a growing population.

As with rice, the lasting benefits of improved seeds and improved farming technologies now largely depends on whether India develops infrastructure such as irrigation network, flood control systems, reliable electricity production capacity, all-season rural and urban highways, cold storage to prevent spoilage, modern retail, and competitive buyers of produce from Indian farmers. This is increasingly the focus of Indian agriculture policy.

India ranks 74 out of 113 major countries in terms of food security index.[23] India's agricultural economy is undergoing structural changes. Between 1970 and 2011, the GDP share of agriculture has fallen from 43% to 16%. This isn't because of reduced importance of agriculture or a consequence of agricultural policy; rather, it is largely due to the rapid economic growth in services, industrial output, and non-agricultural sectors in India between 2000 and 2010.

Agricultural scientist MS Swaminathan has played a vital role in the green revolution. In 2013, NDTV named him one of 25 living legends of India for outstanding contributions to agriculture and making India a food-sovereign country.

Two states, Sikkim[55][56][57][58] and Kerala[59][60] have planned to shift fully to organic farming by 2015 and 2016 respectively.

Rates of electricity usage for agricultural purposes have been discussed extensively over the years.

Irrigation

Indian irrigation infrastructure includes a network of major and minor canals from rivers, groundwater well-based systems, tanks, and other rainwater harvesting projects for agricultural activities. Of these, the groundwater system is the largest.[61] Of the 160 million hectares of cultivated land in India, about 39 million hectare can be irrigated by groundwater wells and an additional 22 million hectares by irrigation canals.[62] In 2010, only about 35% of agricultural land in India was reliably irrigated.[63] About 2/3rd cultivated land in India is dependent on monsoons.[64] The improvements in irrigation infrastructure in the last 50 years have helped India improve food security, reduce dependence on monsoons, improve agricultural productivity and create rural job opportunities. Dams used for irrigation projects have helped provide drinking water to a growing rural population, control flood and prevent drought-related damage to agriculture.[65] However, free electricity and attractive minimum support price for water intensive crops such as sugarcane and rice have encouraged ground water mining leading to groundwater depletion and poor water quality.[66] A news report in 2019 states that more than 60% of the water available for farming in India is consumed by rice and sugar, two crops that occupy 24% of the cultivable area.[67]

Output

As of 2011, India had a large and diverse agricultural sector, accounting, on average, for about 16% of GDP and 10% of export earnings. India's arable land area of 159.7 million hectares (394.6 million acres) is the second largest in the world, after the United States. Its gross irrigated crop area of 82.6 million hectares (215.6 million acres) is the largest in the world. India is among the top three global producers of many crops, including wheat, rice, pulses, cotton, peanuts, fruits and vegetables. Worldwide, as of 2011, India had the largest herds of buffalo and cattle, is the largest producer of milk and has one of the largest and fastest growing poultry industries.[68]

Major products and yields

The following table presents the 20 most important agricultural products in India, by economic value, in 2009. Included in the table is the average productivity of India's farms for each produce. For context and comparison, included is the average of the most productive farms in the world and name of country where the most productive farms existed in 2010. The table suggests India has large potential for further accomplishments from productivity increases, in increased agricultural output and agricultural incomes.[69][70]

In addition to growth in total output, agriculture in India has shown an increase in average agricultural output per hectare in last 60 years. The table below presents average farm productivity in India over three farming years for some crops. Improving road and power generation infrastructure, knowledge gains and reforms has allowed India to increase farm productivity between 40% and 500% over 40 years.[24] India's recent accomplishments in crop yields while being impressive, are still just 30% to 60% of the best crop yields achievable in the farms of developed as well as other developing countries. Additionally, despite these gains in farm productivity, losses after harvest due to poor infrastructure and unorganised retail cause India to experience some of the highest food losses in the world.

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World's largest producer

The Statistics Office of the Food and Agriculture Organization reported that, per final numbers for 2009, India had grown to become the world's largest producer of the following agricultural products:[78][79]

- Fresh fruit
- Lemons and limes
- Buffalo milk, whole, fresh
- Castor oil seeds
- Sunflower seeds
- Sorghum
- Millet
- Spices
- Okra
- Jute
- Beeswax
- Bananas
- Mangoes, mangosteens, guavas
- Pulses
- Indigenous buffalo meat
- Fruit, tropical
- Ginger
- Chick peas
- Areca nuts
- Other bastfibres
- Pigeon peas
- Papayas
- Chillies and peppers, dry
- Anise, badian, fennel, coriander
- Goat milk, whole, fresh

Per final numbers for 2009, India is the world's second largest producer of the following agricultural products:[78]

- Wheat
- Rice
- Fresh vegetables
- Sugar cane
- Groundnuts, with shell
- Lentils
- Garlic
- Cauliflowers and broccoli
- Peas, green
- Sesame seed
- Cashew nuts, with shell
- Silk-worm cocoons, reelable
- Cow milk, whole, fresh
- Tea
- Potatoes
- Onions
- Cotton lint
- Cotton seed
- Eggplants (aubergines)

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- Nutmeg, mace and cardamoms
- Indigenous goat meat
- Cabbages and other brassicas
- Pumpkins, squash and gourds

In 2009, India was the world's third largest producer of eggs, oranges, coconuts, tomatoes, peas and beans.[78]

India and China are competing to establish the world record on rice yields. Yuan Longping of China National Hybrid Rice Research and Development Centre set a world record for rice yield in 2010 at 19 tonnes per hectare in a demonstration plot. In 2011, this record was surpassed by an Indian farmer, Sumant Kumar, with 22.4 tonnes per hectare in Bihar, also in a demonstration plot. These farmers claim to have employed newly developed rice breeds and system of rice intensification (SRI), a recent innovation in farming. The claimed Chinese and Indian yields have yet to be demonstrated on 7 hectare farm lots and that these are reproducible over two consecutive years on the same farm.[80][81][82][83]

Horticulture

The total production and economic value of horticultural produce, such as fruits, vegetables and nuts has doubled in India over the 10-year period from 2002 to 2012. In 2012, the production from horticulture exceeded grain output for the first time. The total horticulture produce reached 277.4 million metric tonnes in 2013, making India the second largest producer of horticultural products after China.[84] Of this, India in 2013 produced 81 million tonnes of fruits, 162 million tonnes of vegetables, 5.7 million tonnes of spices, 17 million tonnes of nuts and plantation products (cashew, cacao, coconut, etc.), 1 million tonnes of aromatic horticulture produce and 1.7 million tonnes of flowers (7.6 billion cut flowers).[85][86]

During the 2013 fiscal year, India exported horticulture products worth ₹14,365 crore (US$1.8 billion), nearly double the value of its 2010 exports.[84] Along with these farm-level gains, the losses between farm and consumer increased and are estimated to range between 51 and 82 million metric tonnes a year.

Organic agriculture

Organic agriculture has fed India for centuries and it is again a growing sector in India. Organic production offers clean and green production methods without the use of synthetic fertilisers and pesticides and it achieves a premium price in the market place. India has 6,50,000 organic producers, which is more than any other country.[88] India also has 4 million hectares of land certified as organic wildculture, which is third in the world (after Finland and Zambia).[89] As non availability of edible biomass is impeding the growth of animal husbandry in India, organic production of protein rich cattle, fish and poultry feed using biogas /methane/natural gas by cultivating Methylococcus capsulatus bacteria with tiny land and water foot print is a solution for ensuring adequate protein rich food to the population.[90][91][92][93]

Agriculture based cooperatives

India has seen a huge growth in cooperative societies, mainly in the farming sector, since 1947 when the country gained independence from Britain. The country has networks of cooperatives at the local, regional, state and national levels that assist in agricultural marketing. The commodities that are mostly handled are food grains, jute, cotton, sugar, milk, fruit and nuts[94] Support by the state government led to more than 25,000 cooperatives being set up by the 1990s in the state of Maharashtra.[95]

Sugar industry

Most of the sugar production in India takes place at mills owned by local cooperative societies.[67] The members of the society include all farmers, small and large, supplying sugarcane to the mill.[96] Over the last fifty years, the local sugar mills have played a crucial part in encouraging political participation and as a stepping stone for aspiring politicians.[97] This is particularly true in the state of Maharashtra where a large number of politicians belonging to the Congress party or NCP had ties to sugar cooperatives from their local area and has created a symbiotic relationship between the sugar factories and local politics.[98] However, the policy of "profits for the company but losses to be borne by the government", has made a number of these operations inefficient.[99][95]

Marketing

As with sugar, cooperatives play a significant part in the overall marketing of fruit and vegetables in India. Since the 1980s, the amount of produce handled by Cooperative societies has increased exponentially. Common fruit and vegetables marketed by the societies include bananas, mangoes, grapes, onions and many others.[100]

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Dairy industry

Dairy farming based on the Amul Pattern, with a single marketing cooperative, is India's largest self-sustaining industry and its largest rural employment provider. Successful implementation of the Amul model has made India the world's largest milk producer.[101] Here small, marginal farmers with a couple or so heads of milch cattle queue up twice daily to pour milk from their small containers into the village union collection points. The milk after processing at the district unions is then marketed by the state cooperative federation nationally under the Amul brand name, India's largest food brand. With the Anand pattern three-fourth of the price paid by the mainly urban consumers goes into the hands of millions of small dairy farmers, who are the owners of the brand and the cooperative.[102]

Banking and rural credit

Cooperative banks play a great part in providing credit in rural parts of India. Just like the sugar cooperatives, these institutions serve as the power base for local politicians.[95]

Problems

"Slow agricultural growth is a concern for policymakers as some two-thirds of India's people depend on rural employment for a living. Current agricultural practices are neither economically nor environmentally sustainable and India's yields for many agricultural commodities are low. Poorly maintained irrigation systems and almost universal lack of good extension services are among the factors responsible. Farmers' access to markets is hampered by poor roads, rudimentary market infrastructure, and excessive regulation."

—World Bank: "India Country Overview 2008"[105]

"With a population of just over 1.3 billion, India is the world's largest democracy. In the past decade, the country has witnessed accelerated economic growth, emerged as a global player with the world's fourth largest economy in purchasing power parity terms, and made progress towards achieving most of the Millennium Development Goals. India's integration into the global economy has been accompanied by impressive economic growth that has brought significant economic and social benefits to the country. Nevertheless, disparities in income and human development are on the rise. Preliminary estimates suggest that in 2009–10 the combined all India poverty rate was 32 % compared to 37 % in 2004–05. Going forward, it will be essential for India to build a productive, competitive, and diversified agricultural sector and facilitate rural, non-farm entrepreneurship and employment. Encouraging policies that promote competition in agricultural marketing will ensure that farmers receive better prices."

—World Bank: "India Country Overview 2011"[17]

A 2003 analysis of India's agricultural growth from 1970 to 2001 by the Food and Agriculture Organization identified systemic problems in Indian agriculture. For food staples, the annual growth rate in production during the six-year segments 1970–76, 1976–82, 1982–88, 1988–1994, 1994–2000 were found to be respectively 2.5, 2.5, 3.0, 2.6, and 1.8% per annum. Corresponding analyses for the index of total agricultural production show a similar pattern, with the growth rate for 1994–2000 attaining only 1.5% per annum.[106]

The biggest problem of farmers is the low price for their farm produce. A recent study showed that proper pricing based on energy of production and equating farming wages to Industrial wages may be beneficial for the farmers.[107]

Infrastructure

India has very poor rural roads affecting timely supply of inputs and timely transfer of outputs from Indian farms. Irrigation systems are inadequate, leading to crop failures in some parts of the country because of lack of water. In other areas regional floods, poor seed quality and inefficient farming practices, lack of cold storage and harvest spoilage cause over 30% of farmer's produce going to waste, lack of organised retail and competing buyers thereby limiting Indian farmer's ability to sell the surplus and commercial crops.

The Indian farmer receives just 10% to 23% of the price the Indian consumer pays for exactly the same produce, the difference going to losses, inefficiencies and middlemen. Farmers in developed economies of Europe and the United States receive 64% to 81%.

Productivity

Although India has attained self-sufficiency in food staples, the productivity of its farms is below that of Brazil, the United States, France and other nations. Indian wheat farms, for example, produce about a third of the wheat per hectare per year compared to farms in France. Rice productivity in India was less than half that of China. Other staples productivity in India is similarly low. Indian total factor productivity growth remains below 2% per annum; in contrast, China's total factor productivity growths is about 6% per annum, even though China also has smallholding farmers.

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Several studies suggest India could eradicate its hunger and malnutrition and be a major source of food for the world by achieving productivity comparable with other countries.

By contrast, Indian farms in some regions post the best yields, for sugarcane, cassava and tea crops.[108]

Crop yields vary significantly between Indian states. Some states produce two to three times more grain per acre than others.

As the map shows, the traditional regions of high agricultural productivity in India are the north west (Punjab, Haryana and Western Uttar Pradesh), coastal districts on both coasts, West Bengal and Tamil Nadu. In recent years, the states of Madhya Pradesh, Jharkhand, Chhattisgarh in central India and Gujarat in the west have shown rapid agricultural growth.[109]

The table compares the statewide average yields for a few major agricultural crops in India, for 2001–2002.[110]

Crop yields for some farms in India are within 90% of the best achieved yields by farms in developed countries such as the United States and in European Union. No single state of India is best in every crop. Tamil Nadu achieved highest yields in rice and sugarcane, Haryana in wheat and coarse grains, Karnataka in cotton, Bihar in pulses, while other states do well in horticulture, aquaculture, flower and fruit plantations. These differences in agricultural productivity are a function of local infrastructure, soil quality, micro-climates, local resources, farmer knowledge and innovations.[110]

The Indian food distribution system is highly inefficient. Movement of agricultural produce is heavily regulated, with inter-state and even inter-district restrictions on marketing and movement of agricultural goods.[110]

One study suggests Indian agricultural policy should best focus on improving rural infrastructure primarily in the form of irrigation and flood control infrastructure, knowledge transfer of better yielding and more disease resistant seeds. Additionally, cold storage, hygienic food packaging and efficient modern retail to reduce waste can improve output and rural incomes.[110]

The low productivity in India is a result of the following factors:

- The average size of land holdings is very small (less than 2 hectares) and is subject to fragmentation due to land ceiling acts, and in some cases, family disputes. Such small holdings are often over-manned, resulting in disguised unemployment and low productivity of labour. Some reports claim smallholder farming may not be cause of poor productivity, since the productivity is higher in China and many developing economies even though China smallholder farmers constitute over 97% of its farming population.[111] A Chinese smallholder farmer is able to rent his land to larger farmers, China's organised retail and extensive Chinese highways are able to provide the incentive and infrastructure necessary to its farmers for sharp increases in farm productivity.
- Adoption of modern agricultural practices and use of technology is inadequate in comparison with Green Revolution methods and technologies, hampered by ignorance of such practices, high costs and impracticality in the case of small land holdings.
- According to the World Bank, Indian branch's Priorities for Agriculture and Rural Development, India's large agricultural subsidies are hampering productivity-enhancing investment. This evaluation is based largely on a productivity agenda and does not take any ecological implications into account. According to a neo-liberal view, over-regulation of agriculture has increased costs, price risks and uncertainty because the government intervenes in labour, land, and credit markets. India has inadequate infrastructure and services.[112] The World Bank also says that the allocation of water is inefficient, unsustainable and inequitable. The irrigation infrastructure is deteriorating.[112] The overuse of water is being covered by over-pumping aquifers but, as these are falling by one foot of groundwater each year, this is a limited resource.[113] The Intergovernmental Panel on Climate Change released a report that food security may be a big problem in the region post 2030.[114]
- Illiteracy, general socio-economic backwardness, slow progress in implementing land reforms and inadequate or inefficient finance and marketing services for farm produce.
- Inconsistent government policy. Agricultural subsidies and taxes are often changed without notice for short term political ends.
- Irrigation facilities are inadequate, as revealed by the fact that only 52.6% of the land was irrigated in 2003–04,[115] which result in farmers still being dependent on rainfall, specifically the monsoon season. A good monsoon results in a robust growth for the economy, while a poor monsoon leads to a sluggish growth.[116] Farm credit is regulated by NABARD, which is the statutory apex agent for rural development in the subcontinent. At the same time, over-pumping made possible by subsidised electric power is leading to an alarming drop in aquifer levels.[117][118][119]

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- A third of all food that is produced rots due to inefficient supply chains and the use of the "Walmart model" to improve efficiency is blocked by laws against foreign investment in the retail sector.[120]

Farmer suicides

In 2012, the National Crime Records Bureau of India reported 13,754 farmer suicides.[121] Farmer suicides account for 11.2% of all suicides in India.[121][122] Activists and scholars have offered a number of conflicting reasons for farmer suicides, such as monsoon failure, high debt burdens, genetically modified crops, government policies, public mental health, personal issues and family problems.[123][124][125]

Diversion of agricultural land for non-agricultural purpose

Indian National Policy for Farmers of 2007[127] stated that "prime farmland must be conserved for agriculture except under exceptional circumstances, provided that the agencies that are provided with agricultural land for non-agricultural projects should compensate for treatment and full development of equivalent degraded or wastelands elsewhere". The policy suggested that, as far as possible, land with low farming yields or that was not farmable should be earmarked for non-agricultural purposes such as construction, industrial parks and other commercial development.[127]

Amartya Sen offered a counter viewpoint, stating that "prohibiting the use of agricultural land for commercial and industrial development is ultimately self-defeating."[128] He stated that agricultural land may be better suited for non-agriculture purposes if industrial production could generate many times more than the value of the product produced by agriculture.[128] Sen suggested India needed to bring productive industry everywhere, wherever there are advantages of production, market needs and the locational preferences of managers, engineers, technical experts as well as unskilled labour because of education, healthcare and other infrastructure. He stated that instead of government controlling land allocation based on soil characteristics, the market economy should determine productive allocation of land.[128]

Initiatives

The required level of investment for the development of marketing, storage and cold storage infrastructure is estimated to be huge. The government has not been able to implement schemes to raise investment in marketing infrastructure. Among these schemes are 'Construction of Rural Godowns', 'Market Research and Information Network', and 'Development / Strengthening of Agricultural Marketing Infrastructure, Grading and Standardisation'.[129]

The Indian Council of Agricultural Research (ICAR), established in 1905, was responsible for the search leading to the "Indian Green Revolution" of the 1970s. The ICAR is the apex body in agriculture and related allied fields, including research and education.[130] The Union Minister of Agriculture is the president of the ICAR. The Indian Agricultural Statistics Research Institute develops new techniques for the design of agricultural experiments, analyses data in agriculture, and specialises in statistical techniques for animal and plant breeding.

Recently (May 2016) the government of India has set up the Farmers Commission to completely evaluate the agriculture programme.[131] Its recommendations have had a mixed reception.

In November 2011, India announced major reforms in organised retail. These reforms would include logistics and retail of agricultural produce. The announcement led to major political controversy. The reforms were placed on hold by the government in December 2011.

In the summer of 2012, the subsidised electricity for pumping, which has caused an alarming drop in aquifer levels, put additional strain on the country's electrical grid due to a 19% drop in monsoon rains and may have contributed to a blackout across much of the country. In response the state of Bihar offered farmers over $100 million in subsidised diesel to operate their pumps.[132]

In 2015, Narendra Modi announced to double farmer's income by 2022.[133]

Startups with niche technology and new business models are working to solve problems in Indian agriculture and its marketing.[134] Kandawale is one such e-commerce website which sells Indian red onions to bulk users direct from farmers, reducing unnecessary cost escalations.

Agriculture and Indian economy

The contributions of agriculture in the Indian economy have been increasing over the years. According to the economic survey, the share of agriculture in gross domestic product (GDP) reached almost 20% for the first time in 17 years, making a sole bright spot in performance during financial year 2020–2021.[135]

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Modern farms and agriculture operations have changed over the years primarily because of advancements in technology, including sensors, devices, machines, and information technology.[136]

Personalized e-commerce stores and market places have brought farming products like fertilizers, seeds, machines and equipment that help farmers grow quality products. Educational portals let farmers know innovative things about farming that increase the contributions of agriculture to the economy.[137][138]

Organic farming

Paramparagat Krishi Vikas Yojana (PKVY) was launched in 2015 by the Narendra Modi regime to promote organic farming, under which farmers form organic farming clusters of 50 or more farmers with a minimum total area of 50 acres to share organic methods using traditional sustainable methods, costs, and marketing, etc. It initially aimed to have 10,000 clusters by 2018 with at least 500,000 acres under organic farming and government "cover the certification costs and promote organic farming through the use of traditional resources." Government provides INR 20,000 per acre benefit over three years.[139]

Other techniques of organic farming like zero budget natural farming (ZBNF) have been implemented by many small-scale farmers in Wayanad, Kerela. In this process they implement more natural and ecological methods of farming that decrease or completely cease use of pesticides and damaging chemicals, allievating the damage that, "Decades of over-use of chemicals and mono cropping and lack of management of soil fertility have depleted the formerly fertile forest-land" [140] in the area.

Along with progression with organic farming methods, new technologies in the form of moisture sensors and artificial intelligence are also being implemented in the Indian farming sector. Farmers are using moisture sensors to ensure that different crops have the exact amount of water that they need, which ensures that farmers can maximize crop yield.[citation needed] Along with this, artificial intelligence techniques are being implemented in food processing plants across India, where "AI provides more efficient ways to produce, harvest, and sell crops products as well as an emphasis on checking defective crops and improving the potential for healthy crop production" that further helps maximize crop yield as Rayda Ayed describes in her research on the impact of artificial intelligence in India.[141]

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