

Exploratory Study on Rural Development in India Developing a Model by Comparing Role Model of a Sustainable Village with other Village

Janak Bhandari¹, Sarojini Naik², Sunita Pati³, Devaraj Bhandari⁴,
Mahesh K. Acharya⁵, Ajay Kudale⁶, Manoj Kumar Mane⁶ and Sneha Kumari^{7*}

¹Hamro Pahunch Multipurpose Cooperative, Tulsipur, Nepal; bhrjanak@gmail.com

²ARCS, Karanjia Circle, Cooperation Department, Government of Odisha, India; sarojininaik@gmail.com

³ARCS, Cuttack City, Cooperation Department, Government of Odisha, Bhubaneswa, India;
sunita.pati29@gmail.com

⁴Purba Nepal Multipurpose Cooperative Limited, Mechinagar, Nepal; memahesh2072@gmail.com

⁵Shatyanarayan Agriculture Multipurpose Cooperatives, Imadol, Lalitpur, Nepal; acharyamkumar@gmail.com

⁶Maharashtra State Agriculture Marketing Board, Maharashtra, India; ajaykudale89@gmail.com,
manojmane909@gmail.com

⁷Assistant Professor, Vaikunth Mehta National Institute of Cooperative Management, Pune, Maharashtra, India;
snehakumari1201@gmail.com

Abstract

Indian farmers are engaged in agriculture, animal and other ancillary activities in rural areas. Rural areas are the heritage of the developing nation. With time rural sector has been facing several challenges and has become a topic of concern. This has led the government and the upcoming generation to think about the development of rural areas. The country will remain poor, if the rural are poor. With the objective to create a green and sustainable rural development study is based on both primary and secondary data. Secondary data has been collected from journals, reports and websites. Primary data has been collected from the rural people of the village. Three villages have been selected to study the realistic strategy of rural development. Two rural models Ralegaon Siddhi and Hivare Bazaar from Maharashtra has been selected as sustainable rural development models while Mahsar village from Bihar has been selected as undeveloped rural sector. The study appreciates the efforts of rural model and compares it with under developed rural village.

Keywords: Challenges, Realistic Strategy, Rural, Rural Communication, Rural Development, Rural Model, Rural Programs, Rural Schemes, Sustainable, Village

1. Introduction

Rural Development is referred to as improving the quality of life of the people living in rural or sparsely populated area (Kartar, 1986). Rural economy needs to grow to develop Indian Economy. Rural sector has always been a neglected area. Rural areas are still plagued by problems of malnourishment, illiteracy, unemployment and lack of basic infrastructure like schools, colleges, hospitals, sanitation, etc (Kumari et al., 2017). This is the reason

that people have started migrating from rural to urban areas. In order to develop the rural sector there is a need for research in rural development.

There are two broad types of previous studies related to the rural development index, out of which one is related to an evaluation of the extent or level of regional development and the other is related to measuring the quality of life. The Rural Development Index is composed of five domains of analysis: 1. Economy, 2. Education, 3. health and welfare, 4. Environment, and 5. culture and leisure. The rural sector has

*Author for correspondence

not been able to map the rural index. This is the reason that most of the rural villages are struggling for their survival.

There is a need for research to address a research question that How to create a green and sustainable rural development? In order to proceed with the study we have designed the following objectives for the study.

1. To explore the literature on rural development
2. To compare the realistic strategy of rural model village with undeveloped village
3. To develop a model interlinking the factors for greening and sustaining rural development

2. Literature Review

Moseley, 2003 defined rural development as the process of improving the quality of life in sparsely populated sector. Song et al., 2012 developed rural development index for improving the process of policy making and strategies for rural development. Rural Development is a strategy to enable a group of people to enhance their long term well being. Economic, social and environmental spheres of human life increases the standard of living (Straka & Tuzova, 2016). Rural Development comprises of natural structure, land use structure, demographic, infrastructure and socio economic structure (Yilmaz et al., 2010).

Rural Development is a coherent system where one factor affects the other (Chambers, 2014). Viability of rural area and local development can be contributed by creating jobs (Green et al., 2005). The extremes of rural poverty are deprivation, sufferings and death. R&D expenditure in the world is concentrated in the industrialized countries. Over a time there has been an ignorance of rural life. There have been several measures like sustainable development, social progress and other indices for rural development. Creation, operation and evolution of food supply chain are key dimension in rural development (Marsden et al., 2000). Rural poverty and resource conservation requires arrangements for greening and sustainable development (Barrett et al., 2005). Durability of rural development model was dependent upon effective governance (Marsden, 2003). Greening rural development is essential for environment sustainability of economy growth. Rural development can contribute to water conservation, soil quality and biodiversity. Rural Development Scheme can help to sustain natural resource and ecosystem service. Sustainable development is a concept that truly integrates environment with developed planning (Adams, 2008).

Social progress is the capacity to meet human needs (Porter et al, 2014). Social Progress Index constitutes of basic human needs, foundation of well being and opportunity. India ranks 41 in basic human needs, 44 in foundation of well being and 45 in opportunity. Basic human needs include nutrition, air, water, sanitation, shelter and professional safety. Foundation of well being includes access to basic knowledge, access to information and communication, health wellness and ecosystem sustainability. Opportunity includes personal rights, access to higher education, personal freedom and equity.

2.1 Rural Development Efforts in India

Rural Development before independence was analyzed under two broad categories namely efforts by British government and efforts by voluntary organization. During British period, famines occurred at regular intervals. It was felt that the challenge of famine could be met through irrigation. Rural Development program was initiated by Spencer Hatch in 1921. Seva Gram Ashram established by Gandhiji in 1935 undertook several development programs like sanitation, adult education and industries.

2.2 Rural Development after Independence

Two approaches were adopted by the government namely Transformation approach and Improvement approach (Kartar, 1986). Transformation approach led to solve the problems of cooperative farming. Improvement Approach brought agriculture development by attaching the importance to programs, Panchayati Raj and Community Development Program.

Rural Development efforts in India are broadly divided in two parts i.e. the rural development during the Pre-independence period and rural development initiation taken by Government since Independence. During British rule 1899 famine occurs and it forces the British Government to look after the rural people of India dying out of hunger. The State Administrators seized the food grains and redistribute it to the famine affected people but this was not backed by any legal sanction and was not a long- term planed program. Later British Government established the Agricultural College and Provincial Research Institute in 1906 and the Indian Agricultural Services as per the recommendation of Famine Commission of 1866 and 1880.

During pre-independence period various rural development programs were initiated by Social Reformers

and National leaders of that time. Sevagram was initiated by Gandhiji in 1938 at Wardha for the upliftment of social, cultural and economic aspects of rural people. Gandhiji established several cottage industries like spinning, weaving for betterment of economic condition of rural flock. He also undertook various programs like adult education, sanitation etc.

Rabindra Nath Tagore started Sriniketan Institute in 1920 for improving the conditions of rural flocks through self-help and mutual-help by providing guidance for agricultural activities, formation of co-operatives and maintenance of village sanitation.

In 1921, Dr. Spencer took initiatives of rural development by setting up a project at Martandom. The main aim and objectives of Martandom Experiment was to eliminate poverty of rural people by making them self-dependent and self-sufficient. So they undertook various programs like farm demonstration, honey and honey bee rearing, cottage industries and animal rearing. Bryne in 1927 started Gourgaon experiments. He undertook various programs to improve the agriculture production by using improved varieties of seeds and technology, health, education and sanitation.

Rural Re-construction program was undertaken by Maharaja of Baroda in 1932 at Baroda. The main objective of this program was to develop better infrastructure facilities for the rural people like road and communication, drinking water facilities, medical activities, improved seeds for agriculture, training for handicraft industries set-up, establishments of schools, co-operative institution and village panchayat.

In 1946 Government sponsored a scheme known as Firka Development Scheme undertaken at Madras having both short and long-term objectives. Short-terms objectives like communication, sanitation and water supply, local Government and co-operatives and long term objectives to achieve self-sufficiency in basic needs of every rural people. Establishment of Rural welfare at every level of administration like state level, Collectorate level and Firka level having 5 to 10 villages.

2.3 Rural Development after Independence

After independence and before five year plan three important programs were taken by the Govt for rural development in India,

1. The Etawah Pilot Project
2. The Nilokheri Movement
3. The Bhoodan Movement

Etawah Pilot Project started in the year 1948 by Albert Mayor at Etawah District of Uttar Pradesh. Improvement of social condition and degree of production with people participation and co-operation was the main objectives of this program. This program emphasises on the decentralisation of village economy by setting up various Agriculture based industries like poultry, goat, fishery, horticulture and animal husbandry. Various learning activities were undertaken in this project to educate the people regarding adaptation of new method for agriculture.

Nilokheri Movement was started by S.K. Dey, the then Community Development and Co-operation Minister in 1948 with an objective to provide skill development trainings to rural people for active participation in various income generating activities in agro-industries through co-operation and also to provide rural education and awareness about medical care.

The Bhoodan Movement was undertaken by Acharya Vinoba Bhave, in 1951 at Telengana District with an objective to provide some land to landless people from the large land holders and to prevent revolution arising due to land problems. So, that every poor landless people must have some lands for maintaining his livelihood. He also undertook some income generating activities where both educated and uneducated works together for common cause.

India is a country of villages and most of the villages are underdeveloped in all aspects of life i.e. economy, environment, and education and health care. Indian villages are known for its backwardness and poverty dominance. There is absence of basic facilities of like road and communication, safe drinking water, housing, food and modern means of communication. Living standard of rural India is very low. To mitigate these problems government has started many rural development programs since Independence. These programs help the rural flock to overcome poverty and to lead a better standard of living (Kumari et al., 2017). These programs are mainly divided in two categories i.e. Rural Infrastructure Development Schemes and Rural Employment Schemes. Under rural infrastructure development schemes, Bharat Nirman constitutes for most of the infrastructural development activities in rural India. These schemes are as follows:

Bharat Nirman: Bharat Nirman program constitutes many programs within it. Like construction of rural roads for better connectivity and transport. Pradhan Mantri Gram Sadak Yojana launched in the year 2000 to

construct all weather roads to rural areas. This program was most successful program which helps in creating rural infrastructure for economic development. Rural Housing schemes provide financial assistance to the people living under below poverty line to construct own pucca house. Indira Awaas Yojana, PMAY and every state has its own rural housing schemes like in Odisha Biju Pucca Ghar Yojana are contributing to develop better housing facilities for the needy. In recent development beneficiaries were selected from the priority list of SECC Survey 2011 which more transparent. Irrigation facilities were developed by watershed management, constructing bunds, dams, canals and dykes. Now a day's Central Government is providing funds under various schemes like BRGF i.e. Backward Region Grant Fund for development in main three components such as Bijili, Pani and Sadak in 30:30:40 ratio. Rural water supply facilities have been developed by RWSS Dept by constructing overhead tanks, borewell, dug well etc. Rural Electrification by Pradhan Mantri Sahaj Bijli Har Ghar Yojana with an aim to provide last mile electricity connection, Deendayal Upadhyay Gram Jyoti Yojana with an objectives to provide separate connection for agriculture and non-agriculture purpose. Construction of toilet and sanitation facilities has been provided with the help of Swachha Bharat Abhiyan. All these programs were undertaken by Government of India in collaboration with the State Government and Panchayat Raj Institutions.

National Food Security Act, 2013 was launched in 2013 with objectives to provide food and nutritional security to the underprivileged groups by ensuring access to adequate quantity of quality food at affordable price.

All the above mentioned programs and schemes contributes to rural development in four aspects i.e., Economy, Education, Environment and Healthcare.

2.4 Integrated Rural Development Programs

World's largest micro enterprise program Integrated Rural Development Program (IRDP) was launched in India with the aim of ensuring inclusive development of all sectors of society by eliminating rural poverty and unemployment. According to C. Subramaniam "a systematic, scientific and integrated use of all our national resources and as a part of this process, enabling every person to engage himself in a productive and socially useful occupation and earn an income that would meet at least the basic needs." India which is the largest democracy in the world has always burdened by the problem of rural poverty and hence launched the

flagship programme of IRDP with a goal of uplifting rural poor families for a better standard of living. Integrated Rural Development Program was started in the year 1978-79 to improve the living standards of the rural poor. The main aim of this program was poverty alleviation by engaging rural people in all sectors of economy like agriculture and allied activities in primary sector, agro-based industries in secondary sector and trading activities in tertiary sector. This program works mainly in two approaches i.e. cluster approach in selected villages for building up infrastructure facilities at minimum cost and antyodaya approaches for the poorest of the poor should selected first for the beneficiary list. Two broad objectives of IRDP are:

1. To provide sustainable employment opportunities to the poor
2. To empower rural population by increasing agriculture production and small scale industries

The beneficiaries of IRDP are target groups like- rural artisans, laborer's, marginal farmers, SC&ST people, and economically backward classes. From 6th five-year plan onwards the major focus for rural poverty alleviation was through IRDP. Though started as a fully centrally sponsored scheme from 1980 onwards the programme was funded by a 50:50 partnership of both the central and state governments. The productive financial assets and subsidies are provided by various cooperatives, commercial banks and regional rural banks.

The implementing authorities of IRDP are:

- Ministry of rural areas and employment
- State level coordination committee
- District Rural Development Agencies (DRDA)
- Block staffs at the grass root level

2.4.1 Subsidies Provision in IRDP

The target group is provided by government subsidies and loans or credits as financial assistance. These financial assistance provided by various government authorised financial institutions. The subsidies are divided as per the target group and its requirements. The distribution is done as per the following norms:

- First target group- small farmers (25%)
- Second target group- marginal farmers, rural artisans, agricultural laborer's (33.5%)
- Third target group- the SC& ST and the physically challenged group (50%)

2.4.2 Supporting Schemes of IRDP

The following are the supporting schemes of IRDP.

1. Training of Rural Youth for Self Employment (TRYSEM)
2. Development of Women and Children in Rural Areas (DWCRA)
3. National Rural Employment Programme (NREP)
4. Rural Landless Employment Guarantee Programme (RLEGP)
5. Indira Awaas Yojana (IAY)
6. Jawahar Rozgar Yojana (JRY)
7. Million Wells Scheme (MWS)
8. Ganga Kalyan Yojana (GKY)

NREP was started in the year 1980 with 50:50 sharing of both centre and states for generating rural employment by undertaking community development projects for creating new assets at village level. This contributes to economy of rural.

TRYSEM was launched in August, 1979 with an objective to provide skill development training to rural youths, so they can make themselves eligible to works in agriculture as well as industrial sector. The youths living under BPL Line and age group 18-35 are eligible for it and this program provide education to the rural unemployed youths.

RLEGP was started on 15th August, 1983 to provide guarantee employment of 100 days to rural landless people by undertaking various construction activities, social forestry etc.

JRY was initiated in the year 1989 with an objective to provide 50 to 100 days works in a year. 30% works reserved for women. Implementing agency was the village panchayat. This programs helps the rural people to access drinking water and sanitation, acquire house and it helps in improvement of quality of village life.

Antyodaya Programs means the poorest of the poor. The main aim of this program was to identify at least five such poor families from each village every year and provide with financial support for the upliftment economic condition.

Drought Prone Area Program (DPAP) was launched to reduce the impact of drought and to stabilize the income of rural people and to maintain the ecological balances of the nature.

Desert Development Program (DDP) was started in 1977-78. The basic objectives of this program were to reduce the adverse effect of drought and desert with

rejuvenations of natural resources. This program helps in socio-economic development in selected areas.

FFWP: The main aim of this program was to provide food grains as wage at subsidised rate to the rural people this supplement nutrition requirement of poor people.

DWCRA: In 1982-83 Development of women and child in rural areas program was launched for upliftment of socioeconomic condition of women living in rural areas by involving them in income generating activities.

EAS was launched in 1983 to provide employment of 100days to two members of a family in a year. This program helps in creating new assets and infrastructure at rural level for employment generation.

SGSY was started in the year 1999 by replacing IRDP and TRYSEM. This program helps in setting rural industries by providing banking credit and subsidy facilities.

NSAP was launched in the year 1995 by Central Govt. to provide financial assistance to the people living under below poverty line. Like Old age Pension, National Family Benefit Scheme etc.

2.5 Implication of Liberalization on Rural Development

During the time of 1980's Indian economy was controlled by government in many sectors. Liberalization came in 1990s, as an initiative towards globalization and economic liberalization. It was taken by Dr. Manmohan Singh, who was then the Finance Minister of India under the Congress government this is perhaps the milestone in the economic growth of India and it aimed towards welcoming globalization. Since, the liberalization plan, the economic condition gradually started improving and today India is one of the fastest growing economies in the world with an average yearly growth rate of around 6-7%. Today, India is the world's 12th largest economy in terms of market exchange rate. Liberalization has various positive impacts in our economy.

After the membership of WTO, India economy has got international market accesses. India has become exporter of many agriculture products but, the farmers are not actually benefitted. Most of the farmers are illiterate and cannot export their product directly to foreign market. The export agencies are earning more profit. Liberalization has negative impact in our Indian village culture. The original organic products are being replaced by Mcdonal Pizza, burger and cocacola.

3. Research Design

The study is based on both primary and secondary data. Secondary data has been collected from journals, reports, agriculture census and websites. Primary data has been collected from the rural people of the village. Three villages have been selected to study the realistic strategy of rural development. Two rural models Ralegaon Siddhi and Hivare Bazaar from Maharashtra has been selected as green and sustainable rural development models while Mahsar village from Bihar has been selected as undeveloped rural sector. The study is based on qualitative data. Purposive sampling has been used for data collection. Interviews have been conducted from the village panchayat, rural people and the farmers of the selected villages. Around 10 members of panchayat, 10 rural people and 10 farmers have been selected for the interview from each village. The practices and challenges have been explored in the article.

4. Results and Discussions

A country cannot be developed without women and child development (Lahiri, 2008). Women and children were always neglected in terms of their health and welfare, education, economic participation etc. one flagship program under IRDP was DWCRA i.e. development of women and children in rural area through support services to enable them to take up income generating activities and provide child care facilities.

Apart from farm income non farm income generation is also an important aspect for rural development for providing rural poor sustainable way of income generation. Khadi and village industries were a boon for this non farm sector through small scale village industries. Culture is another aspect for reviewing integrated rural development. After fulfillment basic needs cultural aspects is considered a social indicator while measuring the standard of living. Parks, community centres, amenity and recreational facilities along with rural tourism can increase the happiness index of rural people.

The Government of India in 1999 has introduced a new programme in place of IRDP known as Swarnajayanti Gram Swarozgar Yojana (SGSY) for uplifting the BPL families. SGSY is a Credit-cum-Subsidy programme which covers all aspects of self-employment of rural poor by forming self-help groups, providing training, credit technology, infrastructure and marketing facilities. IRDP

along with sub programmes DWCRA, TRYSEM, GKY, MWS etc merged in SGSY and became the biggest self employment programme in India for povert alleviation. Survey was conducted in the three villages and the results have been discussed below.

4.1 Realistic Strategy for Rural Development

Around 70 % of Indian population lives in rural areas. Rural economy is highly dependent upon agriculture so there has been strategy to develop the rural sector (Sneha, 2017; Sneha et al., 2016). There has been discrimination of wealth in the country. Rural people are often found to face several challenges. The various strategies for rural development has been under study since pre-independence era. According to the last census report of (2011-12), 216.5 million people in rural areas are poor. Rural sector needs rejuvenation and rebuilt of their life standard (Acharya, 2008).

4.1.1 Education

The quality of education in rural sector is low. As a result the children do not undergo all round development. The child psychology, scientific research with highly equipped technology, updated syllabus is often found lacking in the villages. Most of the children studying in rural villages are unable to solve basic mathematic problem. This leads to low underdevelopment of the rural sector. Education can be promoted by social awareness camp and building good facilities for teaching and training for children.

4.1.2 Health and Sanitation

There has been lack of sanitation in rural sector. According to BBC, India is a country where only 46.9% of the 246.6 million households have toilet while 49.8% defecate in the open. The remaining 3.2% use public toilets. About 77% of homes in the eastern state of Jharkhand have no toilet, while the figure is 76.6% for Orissa and 75.8% in Bihar. Government has set up several sanitations in developed cities while there is still pending work in most of the villages.

National Rural Health Mission program was launched in 2005 to improve the health of the poor people. Health and sanitation is an important element for rural development. For health there have been several medical hospitals and clinics set up for people and for sanitation, corporations have set up several toilets.

4.1.3 Forest Development

Forest is a source of livelihood among rural people in many developing countries. Woods, forest vegetables, minerals, animals etc. are the source of livelihood of the rural people. Forests are the key to rural development. Forests not only serve as a source of employment but also lead to green and sustainable environment. It has been observed that the forest land has been degraded and resulted into deforestation with rise in population.

4.1.4 Community Forest Program

We should give authority to community to conservation and utilizations of forest product. Community people democratically elected the conservation committee. Conservation committee can plan for the income generating program along with conservation plan like tree plantation. They can make following income generating program through Bamboo plantation, planting various herbal, selling of grass, Thinning program, can use old trees as a wood or for fire, park and recreation construction. Through the above community forest program, forest will conserve, employment generate in village level and income of rural people increase.

4.1.5 Agriculture

Agriculture has been a prior important element for the GDP of the country. Though Agriculture production has always been raising for all the cereal, commercial, cash and horticulture crops yet the producers ie farmers are struggling with poor income (Kumari and Patil, 2017). This often has led to poor rural development (Halim et al., 1998). Lack of irrigation, fragmentation of land, traditional farming, inefficient marketing facilities, and general socio-economic backwardness, slow progress in implementing land reforms and inadequate or inefficient finance and marketing services for farm produce are few reasons for poor growth

4.1.6 Infrastructure

Villages in rural areas have poor road connectivity and suffer either with no electricity power or high electricity bills.

4.2 Role Model of Ralegan Siddhi and Hivare Bazaar for Sustainable Village

Ralegan Siddi and Hivare Bazaar were drought prone village of Maharashtra, receiving 450 to 650 mm

water annually. Before 1975, the village condition was very worse. There were severe problems of education, unemployment, water and villager's addiction to alcohol. With time the village has become an ideal model for rural development. The factors responsible for change in the scenario were clustered.

Anna Hazare, a bachelor, retired from Indian army in 1975. He fully devoted his service for the development of his village. He gathered people and convinced them to voluntary work for village development. He convinced them to stop alcohol production and consumption. Selling of alcohol, cigarette and tobacco is strictly ban within the territory of the village. He was army retired man so he made strict discipline to ban alcohol consumption in village. They started with building Hindu Temple. This was an initiative to make people more discipline. Through voluntary work they made many infrastructures like school, water conservation dam, road, etc.

4.2.1 Education

In 1979, they started school to develop entrepreneurship skill in people. By, donation of the villagers, and voluntary work they are giving quality and practical education. Anna regularly meets students and asks them about their parents' behavior. Anna knows children are very innocent and they don't hide their parent's behavior. Parents found guilty of consuming alcohol are being punished by Anna Hazare.

4.2.2 Environment and Waste Management

The unique model of waste management has been successfully created. Students' urine has been used for fertilizer and irrigation to the plants. They have equipment to recycle the urine and irrigate the plants. The village is neat and clean. Every villager is aware about the cleanliness about their surroundings.

4.2.3 Irrigation and Plantation

Grazing was banned and water conservation was done. Villagers made well, dams to irrigation for their crops. Rural people have been using drip irrigation system. This is a very important lesson for us to utilization of water.

4.2.4 Agriculture

Agriculture is main source of livelihood in Ralegan Siddi. Some youth are in Indian army service. Agriculture, cow, buffalo and goat producing is their main income resource. They are producing dry farming crops like Jowar and Bazra.

4.2.5 Voluntary Work without Donation

The strength behind the rural development is voluntary work. The villagers denied any donation from outside but every government service holder belonging to the village compulsorily contributes their one month salary for village development. They don't accept donation because they think that donation makes people dependent in grants and increases dependency.

4.2.6 Recycling the Wastes

Development of solar and wind energy has been made to fulfill the electricity demand of the villagers. Villagers are trained how to make varmi compost from wastes. Training is also given on organic farming. Subsidy is given on Biogas plant to villagers. Biogas and other use of renewal energy decrease the environmental pollution and increase the villager's income.

4.2.7 Emphasis to Cooperative Association

Cooperative is an important pillar of rural development. Credit union can play a vital role to grant small amount of loan for their production sector. No middle man is there in cooperative because cooperative is organization where producer and consumer are same. Abolishment of middleman increases the income of the farmers. They can generate employment in their village through cooperative. It can bring prosperity in village. There is some issue which hinders the development of the cooperative sector of India, like government interferences, bribery, nepotism, and weak man power and management skill.

4.2.8 Participation of Villagers in Planning Formulation

We can see two type of planning formulation top to bottom and bottom to top. In our planning system rural development planning are formulated by centre. Planning commission, NITI aayog, various economist, bureaucrat, and think tank participated in planning formulation. This is a top to down approach. Bottom up planning approach develop the leadership to the villagers. The villagers submit their requirements to the central, state, municipality and grampanchayat. It empowers the villagers and they take ownership to the projects makes the sustainability of the development. All villagers are gathered to meetings for policy formulation program.

They demand village requirements in the presence with the government authority. The government authority in that meeting sends the requirements of villagers to the upper level authority. After sanctioning the budget from government one construction committee comprising women, ST, SC to be made. The village construction committee gives tenders and contracts the project with builders. After inspection by the inspection committee by villagers and government engineers the construction committee submits the bills for payment. The two model of Ralegan Siddhi and Hivare Bazaar development gives ownership to the villagers.

4.3 Status of Rural Development at Mahsar Village

Mahsar is a large village located in Sheikhpura district of Bihar. According to census report 2011, it has a population of 2282. Interview has been conducted from the rural people of the village. It has been observed that the village has improved in terms of road connectivity and infrastructure as compared to last 10 years but the village has not shown much improvement in last 5 years. Jeevika, a rural livelihood program is working towards building a supportive structure for rural village is supported by the Government (Fan and Thorat, 2000). Jeevika is bringing women into groups as self help groups and has led to women empowerment. The group promotes borrowing money to set up a business. Women have started taking tailor as their occupation for becoming self employed. Jeevika has also led to reduce corruption by giving control of the public distribution system to women. Jeevika has introduced measures to increase the farmers' income. Women pay Rs. 10 each day for three times meal in the village in a day. This is a step to make women financially self dependent. There has been drought condition in the village. There is scarcity of drinking water. Ninety percent of the villagers have an occupation of agriculture, cow, goat and buffalo rearing. Due to drought in the year 2018, it has been difficult for the farmers. The digging of the borewell has been strictly banned by the government as the water level is very low. In such situation it is very difficult for the farmers to survive in the village. There is no recycling and water harvesting measures. In such difficult situation the farmers are not able to find any way for their survival in spite of the improvements taken by the self help groups, the farmers are suffering from

drought. They are not able to sow crops as there is no water. The recycling management and water harvesting measures in the model village is absent in this village. The education is provided by the government till class eight.

From the survey of the three villages, it has been observed that though government programs and schemes are the same for all the villages yet few villages are able to manage while most of them undergo a tough situation. There is a need for a leader like Anna Hazare and Popatrao Pawar in every village for taking an initiative for the rural development (Kumari, 2017; Kumari et al., 2017). The reason being there is a need for rural extension, communication, and cooperatives self help groups and NGOs for the overall development of rural sector. Figure 1 shows the model for sustainable rural development.

4.4 Model for Sustaining Rural Development

Livelihood security is a key issue in rural development. Rural people are always exposed to shocks and discrimination in income. Rural people face employment risk, health risk, demographic risk, political risk, crop production risk and agriculture trade risk. Small farmers have limited access to technology. Rural farmers face several market failures (Devereux, 2001).

Sustainable Livelihood is achieved through resources, (Indian Planning Commission, 2011) like natural capital, economic capital, human capital and social capital (Scoones, 1998). Table 1 and 2 gives a tabular representation of the factors affecting rural development.

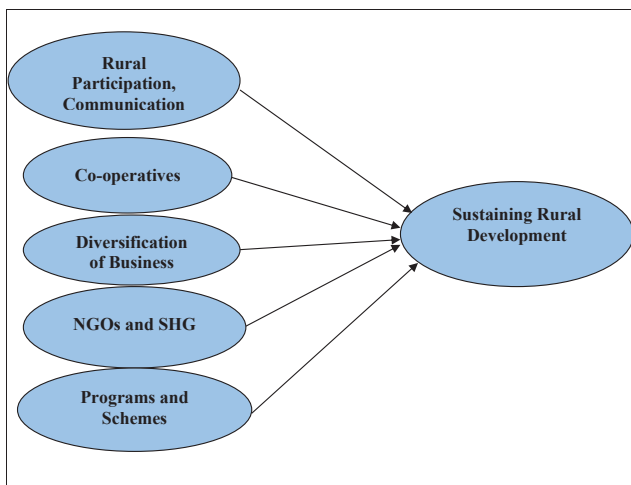


Figure 1. Model for sustaining rural development.

Table 1. Model for greening and sustaining rural development

Rural Development Index	Factors
Economy	Agriculture production Agriculture Distribution Agriculture Infrastructure Other Source of Income
Health & Welfare	Life Expectancy Rate Medical Facilities Disease Prevention
Education	Primary school Secondary School Training Programs
Environment	Drinking Water Electricity Toilet Soil Destruction
Culture and Leisure	Tourist Facility Library Sports Facility

Table 2. Factors affecting greening and sustaining rural development

Factors affecting Greening and Sustaining of Rural Development	References
Rural Participation, Communication and Extension Program	Black, 2000; Defrancesco et al., 2008; Leeuwis, 2013; Miller, 1990; Suvedi et al., 2017; Blackburn, 1994; Richardson, 2005
Co-operatives	Garnevska et al., 2011; Lele, 1981; Baviskar, 1980; Widstrand, 1970; Petridou and Glaveli, 2008; Apthorpe and Gasper, 1982
NGOs	Mondal, 2000
SHG	Karmakar, 1999 LAHIRI-DUTT & Samanta, 2006
Programs and Schemes	Kartar, 1986 Narayana et al., 1988
Diversification of Business	Carter, 2001; Nickerson et al., 2001; Hess et al., 2002; Clark, 2005; Ilbery, 1988

4.4.1 Rural Communication

Rural communication is a system of communicating information, knowledge and values among the rural people for solve their problems. Rural communication

is most important factor for rural development. Rural communication can develop the following needs of the people.

Marketing

Rural communication enhances the marketing of rural products. Using the modern technology it can help for farmer's product marketing. We can develop marketing app for farmers. If one farmer wants to sell buffalo he can give advertisement in marketing app. The needy people can contact him. Community F.M. radio program can help to agriculture product marketing.

Education, health and social awareness

Rural communication can educate people and social awareness too (Salemink and Strijker, 2018). It can aware people for health and sanitation. Informal education can be given to adult people and community school, health centre can be established. Villagers believe in superstition and supernatural forces. Social awareness movement program can be launched. People don't aware about sanitation and pure drinking water. Diarrhoea and cholera are common problem in rural people. Thousands of people die due to these communicable diseases. These problems can be eradicated by rural communication.

Helps to solve social injustice

People in rural village believe in cast system. Higher cast people dominate and exploited the so called lower cast people. Educated people in village should gather all villagers and communicate to solve over these issue.

It is a means of delivering notice and news to the villagers. In the ancient times villagers usually kept notice deliver man to give any notice and news in the village. If any new incidents occur, man shouts with a mike on the peak place of the village and deliver the news or through door to door. In many villages, villagers are running communication system like print and digital media. Print media means papers, and digital media means tv, FM radio. They are helping the rural development.

Rural communication and Cooperative

Cooperative mostly works in with rural people for their rural economic activities cooperative is a members based organization that's why the coops functioning daily works in this time rural people communicate in the same time talk each other's share Esperance.

Increase entrepreneurship skills

People exchange their experiences, ideas and skills among the villagers, it enhance the villagers entrepreneurship skills. They use latest technology in their farming. Their cropping patterns will change (Knickel et al., 2009). Ultimately increase the entrepreneurship skills of the people. This creates employment in rural area and saves the rural environment

Studying rural communication environment can facilitate gathering of data on the content-rich flow of information, between rural and urban users.

4.4.2 Rural Extension

Extension helps to change the outlook of the farmers. There are three dimensions of extension. The first dimension considers extension in terms of agricultural performance, second dimension equates extension to rural community development and the third dimension equates extension to comprehensive non-formal community education. Extension's program emphasizes on efficiency of production, improve and expand methods to deal with the farm as a unit, help farmers in using services of governmental and private agencies in farm planning and operation, assist farmers in their efforts to adjust production to demand, work with all the groups concerned with the business of agricultural production, Marketing, Distribution and Utilization of Farm Products. For development of rural areas, we have to give priority to extension of Agriculture sector. Rural people have to involve extension in agriculture practices. Agriculture extension is a special branch of rural extension. The Agriculture extension helps in efficient farm management like use of natural resources, Production, Marketing, distribution and utilization of farm produce. Several extension activities also help in conservation and Leadership development to improve the standard of living of rural people.

Farmers are involved in social programme as to establish Cooperative, clubs and sharing of knowledge through group discussion. Cooperative is the one of the most important element of rural extension. Cooperative helps to provide new technology in framing and further marketing the product. Developing the communication, infrastructure, schools, colleges and Hospitals plays a major role in rural extension.

4.4.3 Co-operatives and Rural Development

Cooperatives play an important role in developing the agriculture sector and creating employability in rural

sector. They have provided farm supply, agri inputs, and product marketing facility including transport, storage and processing in the rural areas (Zhang-Y. Z., 2004). The Primary agricultural credit or service societies, Agricultural non-credit societies, Agricultural co-operative marketing societies and Co-operative farming societies have helped poor people in rural sector to become self reliant.

4.4.4 Programs and Schemes

As discussed earlier integrated rural development is evaluated under five broad heads like: economy, education, health and welfare, environment, culture and leisure. The first broad head is economy which mainly focuses on agricultural production, distribution and infrastructure. As the main agenda of IRDP is rural poverty alleviation, schemes like IADP, Integrated Agriculture Area Program, food for work etc helped immensely for boosting the economy of rural farmers by increase in agricultural productivity. Different sections of rural farmers which are mostly constituted by small and marginal farmers and agricultural labourers got benefitted from schemes like SFDA, MFAL. For providing employment opportunity to landless poor and expanding the working environment for agricultural labourers two flagship programmes like RLEGP and NREP schemes were started.

Fulfillment of basic needs is an important criteria in rural development. If needs like elementary and adult education, drinking water supply, good roads for rural communication, rural electrification, sanitation facility and nutrition are taken care then the rural village become self sufficient. Mimimum Needs Programme (MNP) was introduced under IRDP looking into these rural needs to increase the consumption level of people in poverty line by providing basic services and facilities network. Indira Awas Yojana helped millions of rural homeless people to fulfill the basic need of own home boosting the grass root level of rural infrastructure.

Rural development cannot be measured if the rural population still continues to be in the state of illiteracy and no skill for employability. Primary and secondary education along with vocational training and skill enhancement training are mandatory to uplift the rural people from the state of poverty. One important scheme under IRDP is TRYSEM i.e. training of rural youth for self employment. By providing skills and aptitude for entrepreneurship rural youth can be self employed through bank loans and subsidy after completion of the training.

4.4.5 Diversification of Business for Rural Development

The farmers are encouraged to take the agriculture projects on poultry and sheep or goat rearing to utilize the dry land for income generation. Cooperative Banks provide training from time to time to the farmers to go with the appropriate techniques for enhancing income. The Bank also sends the farmers to foreign training as and when required so that the farmers can increase their income.

In terms of allied sectors, the farmers have created a good business by having many cows, sheep, goats and hens. These farmers provide special care to the animals and cultivate napier and maize for their survival. Milk collection centres and paneer or dahi shops are also the sources to increase the income. Agro tourism is one of the allied sector through which farmers are generating high income. The Agro tourism sectors are well managed by the farmers with all facilities like food, swimming pools, parks, entertainment tools, resorts and tent houses.

Green House is a structure where artificial conditions are created to protect the crops from harmful weather challenges. These structures are prepared either from Galvanised iron pipes or wooden bamboos. The structure is covered with 200 micron polythene to check the entry of harmful rays with proper sterilization of the soil with methyl bromide. Crops like gerbera, carnation, rose, anthurium, coloured capsicum and few vegetables have been grown by the farmers. Chinese Vegetable plantations are exported to Mumbai and Hyderabad and farmers receive a better profit. Grape plantation is also a source of income generation for the farmers. Several batches of sericulture have been produced by the farmers and this again generates revenue for them. Nursery Plant, Gauva Plantation, Pomogranate Plantation, Strawberry Plantation, Fig Plantation, Gingar Plantation, Onion Storage, Drip Irrigation System, 15 Sheep/Goat Rearing Project, Dairy Project, Fish Farming Project, Farm pond, Kanda Chal Project, Vermi Compost Project and Turmaric Cooker Plant are few source of diversified business to increase income. Many farmers have developed a business through poultry, jiggery and sugarcane harvesting machine.

5. Conclusion and Future Research Direction

Basically more than 50% area of South Asia is covered by Rural Areas. Lack of infrastructure, lack of

Modern technology, Education & Health facility and traditional cultural are the major problems of rural areas. It has been observed that rural development is a growing area in the country where people are talking of metropolitan cities. The paper after undergoing extensive literature review and survey has found that there have been programs from pre independence to 2018 era for rural development. The ideal model of Ralegaon Siddhi an Hivare Bazaar has been discusses. However, the paper has also compared the model with the underdeveloped rural sector. It has been observed that rural development can be possible not only through government programs but cooperatives, rural communication, extension, cooperatives and self help groups result in a green and sustainable rural development.

Adoption of new technology and improved practices in various sectors like Crop Production, livestock rearing fodder production, bee keeping, fishery, horticulture etc. is required. However, we observe that the paper is limited to the three villages and has not touched the low literacy levels, unique media habits, Lack of recharge data and social cultural differences.

The present study can be further extended to see the outcomes of climatic hazard on rural development. The factors leading to sustainable rural development (Sneha and Yogesh, 2016) can be further explored to identify the elements of the factors and interlinked with agriculture practices and farmers' development.

6. Acknowledgement

We place our sincere thanks to Dr. K. K. Tripathy, IES Director, VAMNICOM and Dr. Kh. Somorendro Singh for their continued motivation and guidance to shape the article in the present form.

7. References

1. Acharya, B. R. (2008). Dimension of rural development in Nepal, *Dhaulagiri Journal of Sociology and Anthropology*, 2, 181–192. <https://doi.org/10.3126/dsaj.v2i0.1363>.
2. Adams, B. (2008). Green development: Environment and sustainability in a developing world, Routledge. <https://doi.org/10.4324/9780203929711>.
3. Apthorpe, R. & Gasper, D. (1982). Policy evaluation and meta-evaluation: The case of rural co-operatives, *World Development*, 10(8), 651–668. [https://doi.org/10.1016/0305-750X\(82\)90091-2](https://doi.org/10.1016/0305-750X(82)90091-2).
4. Barrett, C. B., Lee, D. R. & McPeak, J. G. (2005). Institutional arrangements for rural poverty reduction and resource conservation, *World Development*, 33(2), 193–197. <https://doi.org/10.1016/j.worlddev.2004.07.008>.
5. Baviskar, B. S. (1980). The politics of development: sugar co-operatives in rural Maharashtra, The politics of development: Sugar co-operatives in rural Maharashtra, pp. xi + 241. <https://www.cabdirect.org/cabdirect/abstract/19811879327>.
6. Bhavne, Vinoba, (2019). Bhoodan-Gramdan Movement - 50 years : A Review; <https://www.mkgandhi.org/vinoba/bhoodan.htm> as retrieved on 20th Oct. 2019.
7. Black, A. W. (2000). Extension theory and practice: a review, *Australian Journal of Experimental Agriculture*, 40(4), 493–502. <https://doi.org/10.1071/EA99083>.
8. Blackburn, D. J. (1994). Extension Handbook. Processes and Practices. Thompson Educational Publishing, Inc., 240 Portage Road, Lewiston, NY 14092.
9. Carter, S. (2001). Multiple business ownership in the farm sector-Differentiating monoactive, diversified and portfolio enterprises, *International Journal of Entrepreneurial Behavior and Research*, 7(2), 43–59. <https://doi.org/10.1108/13552550110695552>.
10. Chambers, R. (2014). Rural development: Putting the last first, *Routledge*. <https://doi.org/10.4324/9781315835815>.
11. Clark, J. R. A. (2005). The 'New Associationalism' in agriculture: Agro-food diversification and multifunctional production logics, *Journal of Economic Geography*, 5(4), 475–498. <https://doi.org/10.1093/jnecg/lbh064>.
12. Defrancesco, E., Gatto, P., Runge, F. & Trestini, S. (2008). Factors affecting farmers' participation in agri-environmental measures: A Northern Italian perspective, *Journal Of Agricultural Economics*, 59(1), 114–131.
13. Devereux, S. (2001). Livelihood insecurity and social protection: A re-emerging issue in rural development, *Development Policy Review*, 19(4), 507–519. <https://doi.org/10.1111/1467-7679.00148>.
14. Fan, S., Hazell, P. & Thorat, S. (2000). Government spending, growth and poverty in rural India, *American Journal Of Agricultural Economics*, 82(4), 1038–1051. <https://doi.org/10.1111/0002-9092.00101>.
15. Garnevskaja, E., Liu, G. & Shadbolt, N. M. (2011). Factors for successful development of farmer cooperatives in Northwest China, *International Food and Agribusiness Management Review*, 14(4), 69–84. <https://www.ifama.org/resources/Documents/v14i4/Garnevskaja-Liu-Shadbolt.pdf>.
16. Green, G. P., Deller, S. C. & Marcouiller, D. W. (Eds.). (2005). Amenities and rural development: Theory, methods and public policy, Edward Elgar Publishing. <https://doi.org/10.4337/9781845428075>.
17. Halim, A., Ali, M. M., Swanson, B. E., Bentz, R. P. & Sofranko, A. J. (1998). Improving Agricultural Extension, *A Reference Manual*.

18. Hess, U., Richter, K. & Stoppa, A. (2002). Weather risk management for agriculture and agri-business in developing countries. *Climate Risk and the Weather Market, Financial Risk Management with Weather Hedges*. London: Risk Books. <http://www.yourarticlelibrary.com/india-2/rural-development-before-and-after-independence-in-india-3445-words/4795>.
19. Ilbery, B. W. (1988). Farm diversification and the restructuring of agriculture, *Outlook On Agriculture*, 17(1), 35–39. <https://doi.org/10.1177/003072708801700107>.
20. India Planning Commission. (2011). Faster, sustainable and more inclusive growth: An approach to the twelfth five year plan (2012-17).
21. Karmakar, K. G. (1999). Rural credit and self-help groups: Micro-finance needs and concepts in India. Sage Publications India Pvt Ltd.
22. Kartar, S. (1986). Rural Development-Principles, *Policies and Management*.
23. Knickel, K., Brunori, G., Rand, S. & Proost, J. (2009). Towards a better conceptual framework for innovation processes in agriculture and rural development: From linear models to systemic approaches, *Journal of Agricultural Education and Extension*, 15(2), 131–146. <https://doi.org/10.1080/13892240902909064>
24. Kumari, S. (2017). Review on developing a conceptual framework for technology adoption towards sustainability in agro based industry, *SAMVAD*, 13, 14–19.
25. Kumari, S. & Patil, Y. (2017). Achieving Climate Smart Agriculture with a Sustainable Use of Water: A Conceptual Framework for Sustaining the Use of Water for Agriculture in the Era of Climate Change. In *Reconsidering the Impact of Climate Change on Global Water Supply, Use, and Management* (pp. 122-143). IGI Global. <https://doi.org/10.4018/978-1-5225-1046-8.ch008>.
26. Kumari, S., Kasat, K. & Patil, Y. (2017). Resource based view of innovative strategies in sugar industry and their effects towards healthcare, *Indian Journal of Public Health Research and Development*, 8(4). <https://doi.org/10.5958/0976-5506.2017.00455.7>.
27. Kumari, S., Kumbharq, V. & Patil, Y. (2017). Measuring the impact of technology trends and forecasts in sugar industry towards sustainable health-care services, *Indian Journal of Public Health Research and Development*, 8(4). <https://doi.org/10.5958/0976-5506.2017.00453.3>.
28. Kumari, S., Patil, Y. & Rao, P. (2017). An Approach to Sustainable Watershed Management: Case Studies on Enhancing Sustainability with Challenges of Water in Western Maharashtra. In: *Reconsidering the Impact of Climate Change on Global Water Supply, Use, and Management*, IGI Global, p. 252–271. <https://doi.org/10.4018/978-1-5225-1046-8.ch014>.
29. Lahiri-Dutt, K. U. N. T. A. L. A. & Samanta, G. (2006). Constructing social capital: Self-Help groups and rural women's development in India, *Geographical Research*, 44(3), 285–295. <https://doi.org/10.1111/j.1745-5871.2006.00390.x>.
30. Leeuwis, C. (2013). *Communication for Rural Innovation: Rethinking Agricultural Extension*. John Wiley & Sons.
31. Lele, U. (1981). Co-operatives and the poor: A comparative perspective, *World Development*, 9(1), 55–72. [https://doi.org/10.1016/0305-750X\(81\)90076-0](https://doi.org/10.1016/0305-750X(81)90076-0).
32. Marsden, T. (2003). *The Condition of Rural Sustainability*. Uitgeverij Van Gorcum.
33. Marsden, T., Banks, J. & Bristow, G. (2000). Food supply chain approaches: Exploring their role in rural development, *Sociologia Ruralis*, 40(4), 424–438. <https://doi.org/10.1111/1467-9523.00158>.
34. Miller, M. A. (1990). Exploring rural community readiness for participation in community and natural resource development extension education programs, Doctoral dissertation, The Ohio State University.
35. Mondal, A.H. (2000). Social capital formation: The role of NGO rural development programs in Bangladesh, *Policy Sciences*, 33(3-4), 459–475. <https://doi.org/10.1023/A:1004825609376>.
36. Narayana, N. S. S., Parikh, K. S. & Srinivasan, T. N. (1988). Rural works programs in India: Costs and benefits, *Journal of Development Economics*, 29(2), 131–156. [https://doi.org/10.1016/0304-3878\(88\)90032-6](https://doi.org/10.1016/0304-3878(88)90032-6).
37. Nickerson, N. P., Black, R. J. & McCool, S. F. (2001). Agritourism: Motivations behind farm/ranch business diversification, *Journal Of Travel Research*, 40(1), 19–26. <https://doi.org/10.1177/004728750104000104>
38. Petridou, E. & Glaveli, N. (2008). Rural women entrepreneurship within co-operatives: Training support, *Gender In Management: An International Journal*, 23(4), 262–277. <https://doi.org/10.1108/17542410810878077>.
39. Porter, M. E., Stern, S. & Green, M. (2014). *Social progress index 2014*. Washington, DC: Social Progress Imperative.
40. Richardson, D. (2005). How can agricultural extension best harness ICTs to improve rural livelihoods in developing countries? *ICT in Agriculture: Perspectives of Technological Innovation*, Jerusalem: EFITA; 14.
41. Salemink, K. & Strijker, D. (2018). The participation society and its inability to correct the failure of market players to deliver adequate service levels in rural areas, *Telecommunications Policy*. <https://doi.org/10.1016/j.tel-pol.2018.03.013>.
42. Scoones, I. (1998). Sustainable rural livelihoods: A framework for analysis, *IDS Working Paper No, 72*. https://www.researchgate.net/publication/251873585_Sustainable_Rural_Livelihoods_A_Framework_for_Analysis.

43. Song, M. R., Kim, Y. L., Seong, J. I., Kim, K. S., Chae, J. H. & Choi, Y. W. 2012. A Study for the Analysis of the Development Stages of Rural Area Based on 2012 Regional Development Index. Policy Research Report P162. Korea Rural Economic Institute (in Korean).
44. Sneha, K. (2017). Exploration and development of a sustainable agro based industrial ecosystem model with special reference to sugar industry.
45. Sneha, K. & Yogesh, P. (2016). Trends of seeds in the era of climate change-an issue of concern towards sustainability, *Indian Journal of Science and Technology*, 9(21). <https://doi.org/10.17485/ijst/2016/v9i21/95094>.
46. Sneha, K., Pritesh, B. & Yogesh, P. (2016). Energy management for a sustainable industry: Their challenges and scope, *Indian Journal of Science and Technology*, 9(21). <https://doi.org/10.17485/ijst/2016/v9i21/95097>.
47. Straka, J. & Tuzová, M. (2016). Factors affecting development of rural areas in the Czech Republic: A literature review, *Procedia-Social and Behavioral Sciences*, 220, 496–505. <https://doi.org/10.1016/j.sbspro.2016.05.525>.
48. Suvedi, M., Ghimire, R. & Kaplowitz, M. (2017). Farmers' participation in extension programs and technology adoption in rural Nepal: A logistic regression analysis, *The Journal of Agricultural Education and Extension*, 23(4), 351–371. <https://doi.org/10.1080/1389224X.2017.1323653>.
49. Widstrand, C. G. (1970). Co-operatives and rural development in East Africa. Co-operatives and rural development in East Africa.
50. Yilmaz, B., Dasedmir, I., Atmis, E. & Lise, W. (2010). Factors affecting rural development in Turkey: Bartın case study, *Forest Policy and Economics*, 12(4), 239–249. <https://doi.org/10.1016/j.forpol.2010.02.003>.
51. Zhang-Y. Z. (2004). China's Experience with Agricultural Cooperatives in the era of Economic Reform. Asian Agribusiness Research Centre, The University of Sydney, Orange NSW 2800.