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Farming Industry for Economic Development

Dr. Prakash Rodiya
Dept. of Commerce,
Rajarshi Shahu Mahavidyalaya, (Autonomous)
Latur, Dist. Latur

ABSTRACT

Farming Sector is the base of the rural Indian economy about which socio-economic privileges and deprivation rotate and any change in its agreement is likely to have a corresponding collision on the existing pattern of common equity. Sustainable Farming production depends on the sensible use of natural assets in an satisfactory skill management under the prevailing socio-economic infrastructure. Various research studies and rule papers highlight that the Indian Farming division faces resource constraints, transportation constraints, institutional constraints, technology constraints, and strategy induced limits. To achieve sustainable farming progress, it is essential to combine ordinary resources, capital resources, institutional resources, and human property Information Technology (IT) plays an important role in the rapid economic growth and social transformation in developing countries. To reduce the risks of marginalization and vulnerability, this paper suggests development of a comprehensive Farming Resources Information Systems using Geomantic Technology in districts with public funding, facilitate sustainable farming increase, and also propose the need for development of metadata and request of Open GIS model for optimal use of farming assets in India.

Key Words: Information Technology, Farming Sector, India, Technology.

Objectives of the study:

1. To study Agriculture industry.
2. To study concept of economic advancement.
3. To study economic reforms
4. To study role of small farmers.
5. To give suggestions for agricultural development.

Economic Reforms Process:

Since July, 1991 the kingdom has taken a series of events to structure the economy and improve the balance of payments point. The New Economic Policy (NEP-1991) in... changes in the areas of traffic policies, financial & financial policies, fiscal & budgetary policies, and pricing & institutional reforms. The most important features of NEP-1991 are (i) liberalization (internal and external), (ii) extending privatization, (iii) redirect scarce Public Sector Resources to Areas where the private sector is unlikely to enter, (iv) globalization of economy, and (v) market friendly state.

Impact of Economic Reforms Process on Indian Farming Sector:

Farming segment is the mainstay of the rustic Indian economy around which socio-economic privileges and deprivations revolve, and any change in its structure is likely to have a corresponding impact on the obtainable pattern of social equality. No strategy of financial improvement can succeed devoid of sustained and broad based undeveloped growth, which is critical for

- raise living standards,
- alleviate poverty,
- assuring food safety,

- generating buoyant market for expansion of industry and services, and
- making substantial payment to the national financial enlargement.

Studies also show that the financial liberalization and reforms process have impacted on farming and rural sector very much.

Marginalization of Small farmers:

A middle issue in Farming Development is the obligation to increase productivity, employment, and income of poor segments of the undeveloped population. Among the rural poor, the small farmers constitute a sizeable portion in the developing nation. Studies by FAO have shown that small farms constitute between 60-70% of total farm in budding countries and add around 30-35% to total rural output. Small farmers come out as the size group with the largest share of 33.97% in the total land, which is just doubled during this decade. As regards the Large Farmers, they were 1 % of the total owners in 1990-91 but owned nearly 13.83% of the total land. An interesting, but speculative, inference is that the changing position of the large owners represents the other side of the marginalization process, i.e., the incidence and possibly growing strength, of a small but dominant and influential group in agriculture.

Review of literature:

G B Singh –Green Revolution in India:

The Indian Farming sector provide service to about 65% of the labour force, accounts for 27% of GDP, contributes 21% of total export, and raw materials to several industry. The Livestock sector contributes an probable 8.4 % to the nation GDP and 35.85 % of the farming output. India is the seventh largest producer of fish in the world and ranks second in the production of domestic fish. Fish creation has increased from 0.75 million tons in 1950-51 to 5.14 million tons in 1996-97, a snowballing growth rate of 4.2% per annum, which has been the fastest of any item in the food sector, except potatoes, eggs and poultry meat. The opportunity growth in agriculture must come from

- new technology which are not only "cost effective" but also "in conformity" with natural climatic regime of the nation;
- technologies relevant to rain-fed areas specifically;
- continued hereditary improvements for better seeds and yields;
- data improvements for better research, better results, and sustainable planning;
- bridging the gap between information and practice; and
- Judicious land use resource surveys, well-organized management practices and sustainable use of natural resources.

Strategy on Farming growth:

The farming advance plan for the Ninth Five Year Plan is essentially based on the policy on food safety announced by the Government, to twice the food production and make India lack of food free in ten years. The Strategy to make sure food safety is as follows:-

- Doubling food production
- Increase in employment & incomes
- Supplementary/sustained employment and creation of rural infrastructure through Poverty Alleviation Programmes (PAP)
- Distribution of food grains to the people Below Poverty Line (BPL)

The Ninth Plan aim is to achieve a growth rate of about 4.5% per annum farming output and production of 234 MT of food grains by 2001-02. The Policy push and key elements of Growth strategy, as proposed in the Ninth Five Year Plan Document.

- Conservation of land, water, and biological resources
- Rural infrastructure development
- Development of rained agriculture
- Development of minor irrigation
- Timely and adequate availability of inputs
- Increasing flow of credit
- Enhancing public sector investment
- Enhanced support for research
- Effective transfer of technology
- Support for marketing infrastructure
- Export promotion

Farming planning and development:

India is a vast motherland with a variety of landforms, climate, geology, physiography, and vegetation India is endowed with regional diversities for its uneven "economic and farming" development, on account of (i) Agro-climatic environment (ii) Agro-ecological regions (20) and 60 sub-regions, (iii) Agro-Edephic regions, (iv) Terrain mapping sub-units, (v) Natural resources endowments (geology, geomorphology, soil, ground water, surface water, & infrastructure), (vi) Human resources (Population density), (vii) Level of savings in rural infrastructure, and (viii) Level of investment in technology and its implementation. India has a total geographical area (TGA) of 329 Million Hectares (MH) out of which, about 265 MH represent varying degrees of potential for biological production report reveals that more than 50% of TGA is threatened by various types of land degradation, such as soil erosion, gully & ravine formation, salinity, water logging, shifting cultivation, etc. Development of Water

Resources, since Independence, has been undertaken for specific purposes like irrigation, flood control, hydro-power generation, drinking water supply, industrial and various miscellaneous uses. Minor irrigation projects have both surface and ground water as their source, while major and medium projects mostly exploit surface water resources. The break up of the ultimate irrigation potential under the above three categories is,

- 58 M.Ha by major and medium irrigation projects,
- 17 M.Ha by minor surface water schemes, and
- 64 M.Ha by minor ground water schemes.
- enhancing production and productivity of fishermen, fish farmers and fishing industry;
- increasing fish production and thereby, raising nutritional standard of people;
- earning of foreign exchange from export of marine products;
- improving Socio-economic conditions of traditional fishermen;
- generating employment for coastal and rural poor; and
- conservation of depleting species of fish.

Good infrastructure helps in raising productivity and lowering the unit cost in the production activities of the economy. "Farming Infrastructure" refers to "Rural Infrastructure" whereas "Industrial Infrastructure" refers to "Urban Infrastructure". Farming development requires (i) farming research and extension, (ii) rural financial institution, (iii) irrigation and drainage, (iv) farming inputs (fertilizers, seeds, credits), and (v) marketing and storage facilities.The Central Ministry of Agriculture (MOA) is responsible for implementation and formulation of national policies and programs to achieve farming growth through optimum utilization of the land resources, water, soil, plant, fisheries, & livestock resources. Government of India implements the following farming related Schemes (whether Watershed based or Agro-climatic region based) in the nation, which deal farming resources information for Planning and Development:-

- Agro-climatic Regional Planning (ACRP) Project
- Agro-Ecological Mapping Project of the National Bureau of Soil Survey & Land Use Planning (NBSS&LUP):
- All India Soil and Land Use Survey (AISLUS)
- Early Warning System of Farming Situation in India
- Forecasting of Farming output using Space, Agro-meteorology and Land based **Observations (FASAL) Project:**
- Land Records Computerisation Project
- National Farming Research Project (NARP)

- National Farming Technology Project (NATP) to strengthen research-extension-farmer (r-e-f) linkage
- National Watershed Development Program for Rain-fed Areas (NWDPRA)
- Soil and Water Conservation Programs
- Drought Prone Area Development programme
- Desert Development Programme
- National Wastelands Development programme
- Integrated Mission on Sustainable Development (IMSD) Programme

Development of Information Systems and utilization of Information Resources over INTERNET/ INTRANET is a matter of strategic importance in all countries today. Informatics Network plays an important role in the information flow from the implementation level to the planner at Macro(national) level, Macro-meso (region covering more than one state) level to Meso (state) level, and Micro (District, Block and Village) level.Metadata standards are simply a common set of terms and definitions that describe geospatial and non-spatial data. Metadata standards provide a way for data users to know:- The Open GISÒ Model of the Open GIS Consortium Technical Committee [OpenGIS] envisages to synchronize geo-processing technology with the emerging Information Technology standards, based on open systems, distributed processing, and componentware frameworks, and to facilitate interoperability through "common specification" over internet/intranet. The "Pluggable Computing Model" prides a conceptual framework ("reference model") that positions the OpenGIS Specification in the broad context of Information Technology. The Pluggable Tool Services include GIS Tools, Imaging Tools, Expert Tools, and RDBMS Tools. Each Tool has algorithms, data, and interfaces to services in the distributed computing environment. Benefits of the Pluggable Computing **Model are as follows:-**

- To permit increased resource sharing between organizations and processes
- To facilitate understanding the role of the OpenGIS Specification in the larger context of Information Technology
- To enhance data connectivity among users and applications
- To improve the ability of developers and users to integrate new capabilities into existing environments as well as incorporate legacy systems into new environments.

Informatics for farming development requires coordinated inter-sectoral approach and application of appropriate Information Technology (IT) tools, in the areas of :-

- Farming Research,
- Agro-meteorology,

- Farming Marketing,
- Farming Engineering and Food processing,
- Farming Extension and Transfer of Technology,
- Credit & Co-operation,
- Crop Production and Protection,
- Environment & Forest,
- Fertilizers and Manure,
- Fisheries,
- Irrigation and Drainage Systems,
- Livestock, Dairy Development and Animal Husbandry,
- Rural Development and Planning,
- Soil and Water Management,
- Watershed Development, and
- Wastelands Development

Farming Resources Information System:

It is clear that sustainable farming production depends on the judicious mix of natural resources (soil, water, livestock, plant genetic, fisheries, forests, climate, rainfall, and topography) in an acceptable technology management under the prevailing socio-economic infrastructure. In addition to the natural resources components, it is also essential to combine natural resources with capital resources, institutional resources, and human resources for sustainable farming development. Farming Resources components include

- Animal Resources
- Capital resources
- Climate resources
- Environment data
- Fisheries Resources
- Forestry Resources
- Institutional resources
- Land owners data
- Plant Resources
- Socio-economic & Infrastructure data
- Soil resources
- Water Resources

For increasing production at micro level, an inventory of currently used, potentially

available, and an evaluation of the quantity and quality of these resources is required. This requires design and development of farming resources information system using state-of-the-art IT Tools, as given below, to facilitate effective farming planning and development :-

- Data warehousing (Data Bases & Model Bases)
- Expert Systems & Knowledge Bases
- Networking (Internet, Intranet and Extranet)
- Geographical Information System (GIS)
- Application of Remote Sensing Data
- Multi-media Information System
- Decision Technology System
- E-Commerce & E-Governance, and
- Digital Library

Both the Ministry of Agriculture and Ministry of Rural Development implement, through corresponding State departments, various central sector and centrally sponsored schemes related to farming and rural development, on watershed basis. The landscape, climate, and agronomic characteristics of each watershed vary considerably. Each watershed contains a complex mixture of

- soil types,
- landscapes,
- climatic regimes,
- land use characteristics, and
- farming systems.

Each watershed can be subdivided into agro-eco-regions having similar soil types, landscapes, climatic regimes, crop and animal productivity, and hydrologic characteristics. Integrated Watershed Development and Management has been recognized as an effective strategy for sustainable farming development in the nation.

Sources of Farming Resources Information and design of system:

A review of the soil mapping and land degradation mapping was conducted by an Inter-Agency Expert Committee constituted by the Ministry of Agriculture and the Department of Space, and on the basis of the recommendations, a National Mission on "Mapping of Soils and Land Degradation at 1:50,000 Scale" with the major objective of creation of uniform soil and land degradation database for the entire nation is being contemplated. Forestry Survey of India, Geological Survey of India, Fisheries Survey of India, Botanical Survey of India, National Remote Sensing Agency, Survey of India, National Atlas and Thematic Mapping Organization,

National Sample Survey Organization, Central Ground Water Board, etc., conducts resources surveys and develop "resources databases" using ground truths and applications of remote sensing data.

1. Soil survey
2. Geological survey
3. Forest inventories
4. Hydro-meteorological studies
5. Aerial photographs and contour maps
6. Ownership data and infrastructure information
7. Rainfall and stream flow data
8. Land use details
9. Development plans

Conclusion:

The central issue in farming expansion is the necessity to increase productivity, employment and income for poor segments of the farming population of whom the small and marginal farmers constitute a sizeable portion. Information Technology Tools viz., Data warehousing (Data Bases & Model Bases), Expert Systems & Knowledge Bases, Networking (Internet, Intranet and Extranet), Geographical Information System (GIS), Application of Remote Sensing Data, Decision Support Systems, and E-Commerce (b2b, b2c solutions), facilitate the Farmers to know the "farming situation" in Indian as well as abroad and accordingly undertake farming production.

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Digitizationand Its Impact on Economy

Dr. Balaji Rajole
Dept. of Commerce,
S.J.P.Mahavidyalaya,
Lohara, Dist. Osmanabad

ABSTRACT

The waves of adoption and usage of ICTs (Information and Communication Technologies) have revolutionized our world by introducing distinct technology–enabled services in each sphere of our lives. There area unit numerous applications of ICT, Digitization is one in all them. Digitization could be a method of changing the various sorts of info, like text, sound, image or voice into digitalized format. The Digitization encompasses a tested impact on economy and society by reducing state, rising quality of life, and boosting access to data and alternative public services. the method of Digitization is marked by value effectiveness to chop the value that incurred in numerous data practices associated with the assembly, organization and communication of knowledge that creates long-run economic process. the method of Digitization facilitates to preserve, access, and share a clever document to the individuals worldwide which will solely be accessible earlier to people who visit its physical location variety of measures area unit taking within the field everywhere the planet and in Bharat, to conserve and preserve the data of the past and gift for the coming generations. This paper highlights the construct of Digitization beside the social economic and ecological edges of Digitization of information and knowledge.

Keyword: Digitization, Economical impact, Ecological edges, social group impact, cultural heritage, preservation, open access,