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GROWTH INSTABILITY AND CHANGING LAND USE PATTERN IN INDIA

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INTRODUCTION:

Land is a critical natural resource, playing a pivotal role in a nation's socioeconomic and ecological well-being. The finite nature of this resource underscores the importance of sustainable land use and management for the overall welfare of a country's population. Land-use changes carry profound implications, influencing economic growth, quality of life, envi-ronmental resource management, and national food supply. The specific priorities of a country at any given time shape the drivers behind these changes. In the context of India, a developing nation, there is a concerted effort to bolster the industrial and service sectors, creating conditions conducive to the production and consumption of goods and services. This focus on urbanization, as recognized widely, makes urban regions key hubs for the consumption and production of a diverse array of goods and services.

However, Land, as the fundamental resource for agriculture, holds paramount significance as a principal income for India's rural population. The distribution of land to various economic and non-economic activities is intricately tied to factors such as population pressure from both human and livestock, fluctuations in the demand for food, feed, and fibers, technological advancements, and the pace of economic development. The increasing need for land in non-agricultural sectors further amplifies competition for this finite resource. The complex interplay of these factors underscores the dynamic nature of land use in India, reflecting the ongoing challenges in balancing agricultural requirements with the demands of a developing economy and a growing population.

Given the background this study analyses land-use trends, it is vital to categorize land areas into various classifications. The Ministry of Agriculture's is responsible for this classification process, dividing land use into nine distinct categories. All the indicator are explained in the following table.

REVIEW OF LITERATURE

They make an effort to investigate the patterns and dynamics of various land uses in India. They discovered that grazing and pasture areas, as well as arid and uncultivable

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land, generally showed a diminishing tendency. However, in the majority of the states, the land devoted to non-agricultural purposes and cultivable wastes has increased. (Sharma & Pandey, 1902).

The study region for the study were chota Nagpur Region. They found that the agricultural production is not keeping pace with the increasing in population. In addition to this the possibility of the increasing in cultivation is very less (Karan, 1957).

The main land use issues in Kerala include migration, deforestation, conversion of rice land, and urbanization. Kerala's agricultural fields have seen significant shifts in cropping patterns, with a notable decrease in rice production and an increase in the cultivation of coconut and rubber. Kerala became more dependent on other states to supply it with rice as a result of the conversion of rice land to the other problem (George & Chattopadhyay, 2001).

(Sinha, K. , Nasim , & M, 2017) According to the study, the fundamental cause of the net sown area's declining trends is the enormous and ongoing conversion of agricultural land for a variety of uses. The state's growing amount of fallow land and declining net shown area are posing serious problems to agriculture that policy authorities need to address right away.

(Bilsborrow, 1987) The study examines how rural population density in developing countries impacts responses to eco-nomic changes, presenting recent empirical evidence. It suggests that agricultural output can still increase using existing technology. However, slower population growth offers better prospects for improving living standards in these countries.

METHODOLOGY

To support the study, secondary sources were used. Data on the classification of land utilization patterns were collected from the Economic, Statistics and Evaluation Division, Ministry of Agriculture and Farmer Welfare.

The performance of agriculture was determining by calculation the (AGR) annual growth rate and (AAGR) the annual average growth rate. The following is the formula for AGR. When present value V Present equals Past Value V Past. AGR is equal to V present -V past multiplied by 100. However, the following is the formula for the GRA, where stands for AGR period A, GRB for the AGR in period B, GRC stand for the AGR in period C, GRn for the annual growth rate in period n, and N for the number of periods, GRA+GRB+GRC……GRn/N=AAGR.

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The table1 and 2 represent the five-year AAGR for various categories of land utilization status in India over different periods. Reporting area, shows the growth of the area used for

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reporting land utilization statistics. Positive growth rates indicate an increase in the area used for reporting statistics over the respective time periods, while negative growth rates indicate a decrease. Forests, indicates the growth rate of forest area. Positive growth rates signify an increase in forest cover over the respective time periods, while negative growth rates indicate a decrease. Area under non-agricultural uses, It shows the growth rate of land area used for non-agricultural purposes such as urbanization, industrialization, etc. Positive growth rates suggest an expansion of non-agricultural land usage, while negative growth rates indicate a reduction. Barren and unculturable land, represents the growth rate of land that is barren and not suitable for cultivation.

Table1: Five-year Annual Average Growth Rate of land utilization statistics in India during 1950-51 to 1985-86

Year	1950-56	1956-61	1961-66	1966-71	1971-76	1976-81	1981-86
i	0.53	0.45	0.47	-0.12	0.04	-0.01	0.04
ii	5.16	1.06	2.73	0.74	0.89	0.23	-0.11
iii	9.06	1.3	0.45	1.67	2.59	0.99	1.04
iv	-1.99	0.88	-0.89	-3.87	-5.11	-1.52	0.13
v	0.41	0.98	-0.5	-2.05	-2.02	-0.33	0.58
vi	12.12	4.02	1.19	-2.15	-1.02	-0.97	-0.34
vii	-17.12	-4.86	-1.74	1.59	-3.48	-0.27	-0.07
viii	-1.2	-2.25	-2.45	0.74	0.3	-1.14	-1.23
ix	-4.41	-0.64	-0.97	-0.36	-0.67	-0.99	-0.78
x	-6.22	-2.14	-3.63	-1.05	1.3	1.1	0.72
xi	2.45	0.36	2.81	-3.52	7.02	4.32	0.64
xii	-2.92	-0.98	-0.18	-2.59	3.89	2.84	0.53
xiii	1.7	0.63	0.45	0.68	0.15	-0.18	0.1
xiv	2.24	0.75	0.34	1.34	0.71	0.18	0.7
xv	6.73	1.92	-0.36	5.8	3.72	1.92	3.32
xvi	-0.94	-0.11	0	0.26	0.3	0.04	0
xvii	1.69	0.58	0.62	0.28	0.36	0.12	0.09

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Table 2: Five-year Annual Average Growth Rate of land utilization statistics in India during 1986-87 to 2016-17

Year	1986-91	1991-96	1996-01	2001-06	2006-11	2010-17
i	0.02	-0.01	0.02	0.11	0.04	0.05
ii	0.19	0.33	0.3	0.45	0.05	0.1
iii	0.57	1.06	1.22	1.02	1.1	0.89
iv	-0.58	-0.5	-1.63	-0.17	-0.17	-0.18
v	0.01	0.31	-0.06	0.52	0.58	0.47
vi	-0.64	-0.6	-0.73	-0.41	-0.27	0.06
vii	1.44	-1.77	-0.12	-0.31	-1.14	-0.39
viii	-0.93	-1.23	-0.67	-0.59	-0.88	-0.54
ix	-0.55	-1.06	-0.64	-0.49	-0.68	-0.29
x	-0.68	0.74	0.5	1.05	-0.65	1.5
xi	0.59	0.12	1.52	2.58	0.49	1.03
xii	-0.18	0.35	1.05	1.57	-0.05	1.23
xiii	0.33	-0.09	-0.12	0.06	0.07	-0.25
xiv	0.86	0.19	-0.22	0.92	0.54	0.23
xv	2.8	1.16	-0.49	3.63	1.89	1.44
xvi	0.01	-0.17	-0.02	-0.08	-0.07	-0.08
xvii	0.12	-0.09	0.01	-0.09	0.06	-0.14

Source: Authors Calculation from Economic, Statistics and Evaluation Division, Department of Agriculture and Farmer Welfare, Ministry of Agriculture and Farmer Welfare, Government of India

* From 2008-09 to 2016-17, the land utilisation pattern for the different category are provisional data

Note:

i. Reporting area for land utilisation statistics
ii. Forests
iii. Area under non-agricultural uses
iv. Barren and unculturable land
v. Not available for cultivation
vi. Permanent pastures & other grazing lands
vii. Land under Misc.tree crops & groves (not incl. in net area sown)
viii. Culturable waste land
ix. Other uncultivated land excluding fallow land

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x. Fallow lands other than current fallows
xi. Current fallows
xii. Fallow Lands
xiii. Net area Sown
xiv. Total cropped area
xv. Area sown more than once
xvi. Agricultural Land
xvii. Cultivated land

Negative growth rates indicate a decrease in such land, while positive growth rates suggest an increase. Not available for cultivation, shows the growth rate of land that is unavailable for cultivation, possibly due to geographical constraints. Positive growth rates point to a rise in this kind of land, while negative growth rates point to a fall. everlasting pastures.

A positive growth rate implies a rise in the amount of grazing land, whereas a negative growth rate implies a fall. The growth rate of land utilized for various tree crops and groves that is not included in the net area seeded is indicated by the land under miscellaneous tree crops & groves. Positive growth rates suggest an increase, while negative growth rates indicate a decrease. Culturable waste land, represents the growth rate of land that is potentially cultivable but currently left uncultivated.

Negative growth rates indicate a decrease in such land, while positive growth rates suggest an increase. Negative growth rates indicate a decrease, while positive growth rates suggest an increase. Positive growth rates suggest an increase, while negative growth rates indicate a decrease. Current fallows, the growth rate of land left fallow in the current period. Positive growth rates indicate an increase, while negative growth rates suggest a decrease. Fallow Lands, represents the growth rate of fallow lands. Positive growth rates suggest an increase, while negative growth rates indicate a decrease. Net area Sown; it shows the growth rate of the net area sown. Positive growth rates indicate an increase, while negative growth rates suggest a decrease. Total cropped area, this category represents the growth rate of the total area cropped. Positive growth rates suggest an increase, while negative growth rates indicate a decrease.

Area sown more than once, shows the growth rate of land that is sown more than once within the same period. Positive growth rates suggest an increase, while negative growth rates indicate a decrease. Agricultural Land, represents the growth rate of land available for agricultural cultivation. Cultivated land, shows the growth rate of land that is currently under cultivation.

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CONCLUSION

The analysis from 1950-51 to 2016-17 reflects dynamic changes influenced by factors such as urbanization, agricultural policies, and environmental conservation efforts. Notably, forests showed a gradual increase in cover, while non-agricultural land usage experienced significant growth, likely driven by urbanization and industrialization. Fluctuations in barren land suggest ongoing efforts toward reclamation. Pastures and grazing remained relatively stable, as did cultivated land and agricultural activities. However, categories like land under miscellaneous tree crops & groves and culturable waste land saw negative growth rates, indicating potential challenges or shifts in land use practices. Decadal analysis further revealed nuanced patterns, with fluctuations observed across various categories, reflecting changing priorities and environmental dynamics. This comprehensive analysis emphasizes the importance of understanding these trends for informed decision-making in land use planning, conservation, and sustainable development efforts in India. Prioritizing efforts towards forest conservation, urbanization management, and agricultural stability is crucial for ensuring balanced and sustainable land management practices in the future.

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