

CRITICAL REVIEW ON CHANGING AGRICULTURAL LAND USE PATTERN (CROP FARMING AREA CONVERT INTO INLAND FISHERIES) AND ITS IMPACTS

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Abstract:

Over the past few decades, agricultural productivity in India has increased significantly. However, there are still sizable yield gaps for a variety of crops all over the countryside. Many complicating factors, such as the predominance of subsistence farming and limited access to chemical inputs, improved technology, and management practices, can be used to explain why yield discrepancies persist. Fish and fisheries, as well as forest and forestry, are other sub-sectors of agriculture in addition to the study and practice of growing crops. The amount and distribution of rainfall are important aspects of agriculture.

Keywords: Agricultural, Land, Crop, Farming, Fisheries

INTRODUCTION:

India's food production would need to increase in the next few decades due to a projected population increase of more than 1.6 billion people by 2050 as well as a change in dietary preferences. This is a very difficult problem. India currently feeds 18% of the world's population while only taking up 2.4% of the planet's total land area. A significant opportunity to raise agricultural productivity in India through better management techniques and the

adoption of new crop types. Additional investments in agricultural research and development are needed to achieve these gains. By guaranteeing the exhaustive improvement of horticulture and its connected areas in all qualified Indian Expresses, the Public Rural Advancement Program, otherwise called the Rashtriya Krishi Vikas Yojana (RKVY), means to accomplish 4% yearly development in the farming area all through the XI Arrangement period. As per the arrangement, the West Bengal government should make State and area level designs for farming and related areas in light of mandates gave by the Arranging Commission to get monetary help from the Government of India.

RELATED REVIEW OF LITERATURE:

Amol Kadam, Vrushali Lokhande (2021). By 2050, it is predicted that 52.8 percent of India's population will live in urban areas. Urban land is evolving into one of the most valuable natural resources because of the need to accommodate such a huge population. Land use and cover changes are a result of urban population increases, and this process is ongoing. The regulation of land cover changes in major cities is urgently needed. One of India's cities with the fastest growth is Pune. Using high-resolution remote sensing data between 2001 and 2020, a land use and land cover change analysis was performed for Pune City, which encompasses the administrative areas of Khadki Cantonment, Pune Camp Cantonment, and Pune Municipal Corporation. Landsat-5 and Landsat-8 satellite data are used for the study's remote sensing data. The Pune Municipal Corporation website is where the shape file for the administrative borders is found. Google Earth Engine does supervised categorization and image pre-processing. ArcGIS software is used to create a change detection model in order to determine the land use and cover analyses for the years 2001 to 2020. In the past twenty years, a built-up area has undergone a significant shift. From 54.03 percent in 2001 to 63.84 percent in 2020, the built-up area has expanded. In contrast to barren land and other locations, water bodies and green space have slightly increased during the past 20 years. Natural population growth and immigration brought on by the growth of the IT industry over the past two decades are the main causes of land-use changes. [1]

R. Hinz et al. (2020). India is home to the second-biggest populace on the planet and is recognized by a large number of financial circumstances, geography, vegetation, and fauna, as

well as environment. Agrarian systems should adjust to worldwide change drivers like populace increment, moving dietary inclinations, and environmental change to help food security later on. The assurance of land assets and the moderation of environmental change are two other UN Sustainable Development Goals (SDGs) that might be in conflict with future changes in how food is created. To find some kind of harmony between the requests of individuals and the consequences for the climate, leaders should understand the potential compromises between these goals. In this review, we analyze the ways for changes in land use, land cover, and horticultural creation in India up to 2030, as well as their impacts on earthly biodiversity and carbon sequestration. The discoveries show that horticultural regions are probably going to develop and that current farmlands should be strengthened to satisfy future food creation requests. Be that as it may, biodiversity will be lost because of the two cycles. The projections show that the carbon stock is expanding because of escalation exercises while diminishing because of the transformation of regular land into rural land. Generally, we find that the future agrarian efficiency situations that are displayed here bring about higher carbon stocks. Taking everything into account, we accept that rising horticultural strengthening is fundamental to guaranteeing food security and ending the development of cropland and field. While this intensification is being implemented, policies are needed to reduce biodiversity losses. [2]

S. Palani, M. Sivanya (2019). The rate of increase in food productivity is significantly outpacing the rate of population expansion. For the efficient utilization of land resources, it is essential. Land used for agriculture is primarily influenced by the climate, soils, different sorts of resources, and human activity. The land is an extremely valuable resource. Analyzing the utilization of agricultural land is crucial. Most current and upcoming environmental issues, such as rainfall season changes due to climate change, are mostly related to agriculture. The findings of the semi-log linear regression model show that the usage of uncultivable land has increased by 0.01 percent. The result of modified R² indicates a reasonable model fit, and both models are significant at the 1% level. The yearly growth rate of rainfall in 2008 was 23.42 percent, which is a high and positive percentage. In contrast to 2006 and 2012, when compared to 2008, the growth rate is directly opposite and has a negative slope of -30 percent. The area of agriculture, the amount of water that is accessible, and the amount of land that has been used

to raise productivity are all impacted by the diminishing rainfall and rising expense of farming. [3]

Simon Funge-Smith, Abigail Bennett (2019). The more noteworthy profile of interest in sea issues much of the time eclipses the significance of inland fisheries for vocations, food security, and sustainable development. While inland fisheries produce less fish and offer less to worldwide sustenance, food security, and the economy than marine fisheries, overall examinations of fish yield conceal huge ramifications for specific countries and subnational districts' jobs. This examination orchestrates ongoing information and state of the art strategies for assessing such job commitments and their importance in countries with limited admittance to sea assets and hydroponics to feature these commitments. Some socially, financially, and healthfully weak gatherings all over the planet rely upon inland fisheries, yet it is challenging to completely appreciate the degree of their commitments because of the troubles in checking inland fisheries. With inland fisheries getting more consideration in development talks, the circumstance is quick moving along. This has additionally provoked examination to propel how we might interpret the meaning of inland fisheries. To give an ongoing evaluation of the condition of information about the capability of inland fisheries, we survey this review, including gathered information that was as of late delivered in a Food and Farming Association report. [4]

Herzberg, Ronja et al. (2019). A method called land assessment is expected to advance the sustainable development of rural farming creation, especially in emerging countries. Hence, an extensive variety of environmental, monetary, and social variables are engaged with the assessment of land. To assess the feasibility of future horticultural land use types that depend on logical and neighborhood information, this exploration was done in an uneven locale in Focal Vietnam. Participatory Rural Appraisal (PRA), Analytical Hierarchy Analysis (AHP), Geographic Information System (GIS), and reviewing in view of logical writing and nearby information were undeniably utilized with regards to this review to assess land utilization. Five plants — rice, cassava, acacia, banana, and elastic — offer huge agrarian potential in the review region, as per the PRA study information. Each plant kind has different land suitability requirements, which depend on environmental factors as well as monetary and social considerations. The best plant types for the research area are acacia and cassava. Based on the findings of the land appraisal, suggestions for the A Luoi district's agricultural land use

planning are made. A promising strategy for evaluating land is the integration of scientific and local knowledge in land assessment based on GIS technology, AHP, and PRA approaches. [5]

Schulp, C. J. E. et al. (2019). The landscape character and cultural heritage of cultural landscapes are respected. But these multipurpose, frequently low-intensity landscapes are in danger of disappearing. It's crucial to understand how cultural landscapes might evolve in possible futures in order to decide where to focus efforts on ensuring their persistence. Consequently, the objective of this study is to pinpoint late and forthcoming area use changes in the social scenes of the European Union (EU). To do this, we consolidate the spatial appropriation of social scenes in the EU with conceivable past and expected future land take an alternate route. Our discoveries show an unequivocal connection between's specific land head in a different direction and social scene classifications. The land use change processes that greatly affect limited scope, low-power farming scenes that society values are past and future urbanization and rural deserting. Scenes with low degrees of the executives force are overrepresented in de-strengthening. Future strengthening might zero in on low-force scenes, as opposed to the past, which was overrepresented in limited scope scenes with huge cultural worth. As far as future scene change, regular social scenes display major areas of strength for an of changes under different situation settings. The consequences of a situation analysis showed that a portion of the threats to social scenes are associated with regulations overseeing farming, the climate, and different parts of room. When planned and targeted effectively, these policies may also lessen these threats by taking into account their potential effects on cultural landscapes. A focus on landscape quality in addition to the existing focus on particular greening strategies could help to address the need for more direct consideration of cultural landscapes in decisions to be made for the post-2020 Common Agricultural Policy period. [6]

Ghanshyam Pandey, Thiagu Ranganathan (2018). This study focuses on fallow lands as it analyzes the dynamics of India's land-use pattern. Despite growing demand for land for both agricultural and non-agricultural uses, we observe major changes in the land-use pattern and a steady growth of fallow areas. All around the nation, there are fallow lands; however, they are concentrated more in the states of Bihar, Andhra Pradesh, Rajasthan, and Karnataka. The increased variability in precipitation and irrigation water, as well as the low level of automation, are to blame for these shifts in the temporal and spatial distribution of fallow lands.

If these areas could be developed, it would increase agricultural output and the food security of small-scale, low-income farmers. [7]

N. Deka et al. (2018). Assam's economy is primarily agrarian in nature, with a net cultivable area of 28.11 lakh hectares. The analysis procedures utilized in the review incorporated the Area Coefficient (L), Simpson Variety File, and CGR. The net region cultivated, complete developed region, and region planted at least a couple of times generally expanded inside the state. Then again, for the woodland region, desolate and uncultivable land, super durable fields and other nibbling land, land under different trees, forests, and buddy land, huge negative development was noticed. In the state, there were higher convergences of woods region, regions cultivated at least a time or two, and terrains utilized for non-horticultural exercises. Assam's fundamental harvest, rice, represented 60.87 percent of all cultivated land in 2015-16. While the Focal Brahmaputra Valley Zone, Lower Brahmaputra Valley Zone, and Barak Valley Zone showed lower crop enhancement, the North Bank Plain Zone, Upper Brahmaputra Valley Zone, and Slope Zone were seen to have more harvest broadening. [8]

Rajaram Anna Jadhav, Parag A. Khadke (2018). The country's economy depends heavily on agriculture, especially because climate has a major impact on agricultural development. In this essay, an effort should be made to study agricultural development and patterns through effective land use. The potential of the crop yield is shown by the agricultural land use efficiency index. Planning for sustainable agricultural practices in the study region will be easier and more profitable as a consequence of the differences in Spatial and Temporal patterns in Land Use Efficiency evaluated for four decades. [9]

M K Jangid et al. (2018). The goal of the current study was to look at how key crops in Rajasthan, India's humid south-eastern plain, have changed in terms of their use of land, crop diversification, and resource efficiency. The study used secondary data from the Government of Rajasthan's numerous published sources to look at how farming patterns and land use patterns changed between TE 1994 and TE 2014. To gather data on the principal crops for the block period TE 2013–14, the Cost of Cultivation Scheme, MPUAT, Udaipur, Rajasthan, was employed as the primary source of unit-level data collection. The study's findings showed that the concentration of land under various tree crops and groves has significantly increased

(location coefficient 2.14 to 3.19) as a result of the drop in concentration of current fallow and fallow lands other than current fallow and net sown area. From 54.79 percent to 35.80 percent, the percentage of gross cultivated area devoted to all food grains has drastically decreased. The government's Technology Mission on Oil and Oil Palm Scheme (TMOP), which aims to improve the nation's oilseed production, may be primarily to blame for the overall oilseed crops' striking growth in gross cropped area from 34.23 percent to 50.97 percent. Cropping intensity had increased from 133% to 180% over the research period. During the study period, this zone displayed a lower crop diversification index, ranging from 0.11 to 0.22. Of all the crops, paddy cultivation was found to be the most technically, allocative, and economically efficient, with respective efficiency rates of 95%, 96.6%, and 91%. Sorghum and fenugreek were next in line. [10]

B. Sreya, A. Vidhyavathi (2018). This study uses panel data on land use patterns from 1970–1971 to 2016–2017 to evaluate the dynamic changes in land use patterns in Kerala. Markov chain analysis was used to analyze the data that had been gathered. The transition probability matrix showed that the probability of retaining the area under various tree crops and non-agricultural land was highest, at 76% and 70%, respectively, while the probability of retaining the area under barren and uncultivable land and cultivable waste land was lowest. According to estimated land use shares from 2006–07 to 2015–16, there has been a recent movement in favor of fallow lands and barren, uncultivable terrain. It was discovered that the net-sown area was losing shares. In the case of land under net sown area, the predicted share of land use patterns revealed a sharp fall. [11]

Mithra, J., Bashkaran, R. (2018). Land utilization alludes to the complete surface region of all evolved and lacking area at a given overall setting. Two causes stand apart as the most probable possibility for this change. Most importantly, a change in land use might be achieved by cultural requests. Second, the impact of innovation likewise empowers changes that empower the two people and society in general to make use advantage. As geology manages the spatial connection between these parts and arranging, "Land use leads one back to the town ranch and the rancher to the fields, garden, pastures, neglected land, woods, and to the disengaged ranches" (T.V. Freeman 1968). It is on the grounds that society has changed how

it utilizes the land to oblige its changing requirements because of its new living courses of action. For the years somewhere in the range of 2010 and 2015, a geographic analysis of the general land use design in Tamil Nadu's Thiruvavur Region was led. 64% to 77% of the whole geographical region falls under the class of "Net region planted." Just the Thiruthiraiipoondi Taluk is recognized as having a timberland, unaltered. [12]

Subrata Giri (2018). Deshapran Block in the coastal region of Purba Medinipur has had significant socioeconomic development thanks to inland fisheries, particularly brackish water shrimp aquaculture (*Penaeus monodon*). For more financial gain, brackish water shrimp aquaculture is expanding quickly in the research region. In addition to being a source of revenue, fishing also provides our bodies with the nutrients they need, affects national and global income, reduces poverty by providing jobs, opens up employment opportunities for rural and marginal workers, and preserves biodiversity and the aquatic ecosystem. This essay examines how inland fisheries' growth has affected socioeconomic development. Here, the emphasis is primarily on how much the socioeconomic development of this study area has been achieved by reducing agricultural land in favor of increasing inland brackish water fisheries, particularly shrimp farming, and how this has increased soil degradation for brackish water shrimp farming and its effects on the surrounding environment. What are the chances in this regard of accomplishing the stated objective with careful planning? [13]

A Syaifudin, G J Carsjens (2018). Urbanization-related tensions and cycles every now and again put burden on cultivating strategies in metropolitan regions. To keep up with cultivating tasks in those circumstances, a "reconnection" among horticulture and the metropolitan setting is fundamental. Sustainable increase, sustainable adaptation, and sustainable enhancement strategies are utilized to get this cooperation. The Netherlands, India, and China have led examinations on rancher techniques, while numerous different countries, including Indonesia, have not. The motivation behind this study was to research the strategies utilized by Indonesian ranchers to adjust to and profit from the urbanization interaction. A contextual investigation of inland hydroponics, the fundamental type of horticulture in Bogor Regime, Jakarta Metropolitan Area (JMA), was remembered for the examination. Top to bottom meetings with ranchers, government officials, and a purchaser association were embraced notwithstanding a

report analysis. The methodology for surveying the assembled information was design coordinating. The discoveries show that the essential agrarian procedure involved by inland hydroponics ranchers in JMA is heightening. Ranchers center around concentrated strategies to bring down creation costs and, thus, produce sufficient pay from their cultivating activities. In any case, given stresses over animal government assistance and monetary soundness, the exploration additionally shows that fish cultivating in JMA isn't reasonable. In addition, the release of fish pond effluent into public waters raises possible environmental concerns. Additionally, it appears that local training programs are too general to address these problems and improve the sustainability of inland aquaculture. [14]

Joynal Abedin et al. (2018). The Dumuria upazila in Bangladesh's Khulna region has been decided to concentrate on the miniature level current land use design, financial state, and differentiations among metropolitan and rural land use designs. To accomplish the goals, 340 complete examples were gathered utilizing a poll overview, and a plot-to-plot study was done on 2657 plots, or around 267 sections of land. This study shows that assorted financial elements added to the different land use designs in metropolitan and rural areas. In metropolitan regions, the overwhelming example of land use was private or property utilization, which involved roughly 26% of the land, and business and modern use, which represented around 13% of the land. Then again, wetlands and farming area (cropland and between culture) made up around 40% and 23% of the rural region, separately. As per the overview, backwoods and forest cover was exclusively around 4% in metropolitan regions however was roughly 15.39 sections of land out of 141 sections of land in rural regions. Furthermore, that's what this analysis shows though the metropolitan locale is essentially man-made, the rural region is fundamentally shrouded in normal timberland and forest. The aftereffects of this review, be that as it may, offer significant information to help the sustainable development of metropolitan and rural land use and arranging methodology, as well as to expect possible future changes in neighborhood land use. [15]

Rubina Khanam et al. (2018).The main focus of agricultural growth over the last 50 years has been on boosting agricultural output and guaranteeing food security. To their great joy, Indian farmers were able to bring about the "Green Revolution" and the "Rainbow Revolution" with

the aid of agricultural experts and policy leaders. In addition to making millions of Indians happy, this helped India become an agriculturally self-sufficient nation and gave the Indian agricultural sector a boost on the global agricultural map. These tactics included, among other things, improving crop production through the use of better crop types and technologies. It demonstrated a 45% increase in food output per person, making India not only a net food exporting nation but also food self-sufficient overall. Most significantly, India's food production increased 3.7-fold during the past 50 years. The policies, however, failed to acknowledge the necessity of increasing farmers' incomes, and there was no clear connection to promoting farmers' welfare. [16]

Mangalagowri B, H Nagaraj (2017). Nagaraj Land is a restricted asset whose supply is all the while fixed in every way that really matters. With the development in the human populace and the extension of the economy, there is a consistent ascent in the interest for land for an assortment of contending utilizes. The size of the human and animals populaces, the interest design, the innovation being used, the social customs, the area and limit of the land, institutional factors like possession example and privileges, and state control everything influence how land is utilized at a specific time. In addition to having economic effects, the land use pattern has significant ecological components that, if disregarded, might have fatal results. The land is the only source of food for mankind, supporting all forms of life such as plants, animals, and people by supplying them with food and shelter. Man uses land for a variety of tasks, such as farming, urban planning, settlement, industrial production, etc. The country's land resources are under further pressure because of the expanding population and the variety of demands being placed on them. This study demonstrates an increase in non-agricultural land use from 8.9% to 11%, an increase in present fallow land from 3.2% to 6% of the total area, and a drop in cultivable waste land from 4% to 3%. [17]

Sinha, D.K. et al. (2017). Land is a crucial natural resource for every endeavour involving development. As the population grows and there is a growing need for food and housing, the wise use of land is becoming an urgent necessity. Bihar accounts for around 8.63% of the nation's population but just 2.86% of its overall land area. In spite of the fact that there are 1.61 crore farm holdings, 91% of which are marginal, 68 percent of the population depends on

agriculture and related industries for their livelihood. In addition to contributing to general development, agriculture is essential for the state's food and nutrition security. Land is a crucial component of the agricultural industry. Therefore, every modification to the way land is used has a big impact on the nation's and state's ability to feed their people. This essay is based on secondary data made available by the Bihar government. An effort has been made to look at the state's and the nation's overall agro-climatic zone-wise land use. The study shows that the net sown area has decreased at both the state and zonal levels. Greater than in zones I and II is the decline in net sown area in agro climatic zone III. Due to its location in the state's center, zone III has had a quicker rate of urbanization. The region's diminishing water table, growing population, and fragmented property holdings may also be contributing factors to changes in land use patterns. Farmers have left their land fallow in Zones I and II, which are flood-prone areas, because of the terrible flood threat that could harm their crops. The drop in net sown area in the state may also be due to land under trees and groves, which has experienced positive percentage changes over the past ten years as well as growth rates. Concern over the declining net sown area is high in light of the population's projected upward expansion. In order to protect the growing population and meet their needs for food and nutritional security, we must encourage farmers to increase productivity. At the same time, we must protect the wasteful and careless use of natural resources for the benefit of future generations while also considering how quickly climatic conditions are changing worldwide. [18]

Renuka Sah (2017). Here, an effort has been made to draw attention to Uttarakhand's changing land use patterns, current land use patterns, operating holdings patterns, and area irrigated. In the state of Uttarakhand, 90% of the land is mountainous, and 80% of agriculture depends on rain. The holding area is really small. About 30% of the total net sown land has irrigation available to it. It is discovered that during the designated times, the area used for farming and forestry has decreased while waste and uncultivable land have expanded. It is typically performed on terraces carved out of hill slopes and still relies on conventional techniques, but it was unable to get around the limitations imposed by the mountainous terrain. [19]

Thomas A. Fox et al. (2017). In spite of the wealth of advancements, it very well may be very hard to gauge and make sense of changes in land cover and land use in tropical conditions.

With a high populace thickness and a long history of complicated rural land-use designs, Kerala, India, is a biodiversity area of interest. As per a few reports, Kerala's generally agroforestry-and rice paddy-based farming is in decline. Be that as it may, particularly on account of smallholding home nursery farming, the information is regularly episodic. In this work, we utilize a blend of procedures to break down the many-sided changes in land use and cover that are occurring in Kerala. These strategies incorporate remote detecting, quantitative family studies, and semi-organized interviews. [20]

Arun Kumar (2017). One of the most agriculturally advanced areas of the state's southern Gangafic Plain was the Nalanda District. The availability of water and the plain and fertile soil. Rich farmer commercials and people studying the primary bacteria have been around for a while. Who is responsible for developing agricultural practices? The primary products of Kharif (R.C.) and Rabi (wheat, pusse, corio, moong, vegetables, etc.) determine the socioeconomic situation of the region. Nearly all the land is under Udog. There is no wash land and no existing bottom land that is being farmed intensively. The most prevalent double and triple cropping patterns. creation off of C. Numerous agro-based companies have been established, including harvesters, ncs into 10, miles of man-made flour, cash crops, and roads. The primary agriculture-based industries that may brag of being the deco-economic contenders for the populace's transportation and electrical needs are oil mills. The supply of chemical fertilizer and a lack of Agra cultivars are significant factors that require the assistance of government authorities. [21]

Monish Jose, Martina Padmanabhan (2016). Land-use change is a peculiarity that shows significant changes in how individuals communicate with the climate. The supportability of cultivating systems is hampered by different rural examples and a pattern toward non-horticultural land use. With an exceptional accentuation on paddy, the principal crop in Asia, this study attempts to pinpoint the explanations for changes in land use and trimming designs. We present the defense for an interdisciplinary analysis of fast land-use change in the region of Wayanad in Kerala, South India, to investigate the numerous features of supportability: financial, biological, and social issues, which together could bring about a decrease of up to 70% in the space covered by paddy by 2010. The findings are supported by empirical field

research, stakeholder workshops, participatory rural appraisals, and data collected at the state and district levels between 1983 and 2011, as well as state- and district-level data collected over a 4-year period from 2010 to 2013. The principal powers behind the change of paddy fields to other land utilizes are diminished financial feasibility, work deficiencies, and populace tension ashore. Notwithstanding the business options ranchers created because of these causes, changes in land use and agrarian design additionally mirror the impacts of accidental arrangement peculiarities. They are the consequences of strategy clashes and lacking sectoral mix of strategies and execution methodologies, which are the reasons for these issues at a more central level. [22]

Hamidov et al. (2016). In Central Asia, agriculture is a significant economic sector. Therefore, the efficient use of agricultural land is crucial for ecological services, social fairness, economic development, and human well-being. Salinization, erosion, and desertification, however, result in significant land degradation, which subsequently impairs ecosystem services and human health. Here, we examine 362 publications that were published between 2008 and 2013 that examined the effects of agricultural land usage in the five Central Asian nations of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The types and relative shares of environmental, economic, and social issues associated with agricultural land use are analyzed using the Land Use Functions framework. Our main conclusions are that studies on land use in Central Asia have attracted a lot of attention internationally and that the number of publications has been rising faster than normal globally. The most thoroughly studied were the effects of land use on abiotic environmental resources. The impact of agricultural land usage on biotic resources has not been well studied. The least research has been done on the connections between human health and land degradation, such as salinization and dust storms. In situ data gathering makes up a minor percentage of the literature, which is dominated by indirect methods of data processing, including remote sensing and mathematical modelling. [23]

M. P. Pagar (2016). The current paper's analysis of land use patterns and agricultural growth is its main goal. Four categories of land usage have been established, including 1) Agriculture Land, 2) Uncultivable Area, 3) Cultural West, and 4) Forest. the classification of land units into different groups based on their characteristics or suitability for a certain use. Land is

typically utilized for a variety of purposes, including farming, forestry, raising cattle, establishing settlements, building roads, etc. Nearly 90.73% of the total population of the Kalwan Tahsil is directly or indirectly involved in agriculture, which is the main and primary economic activity of man. The slope has a big impact on agriculture. A major factor in the formation of a landform is slope. It depends on how several elements, such as lithology, structure, drainage, relief, denudation, soil, climate, and vegetation cover, interact. In the current analysis, a few factors are taken into account to assess the level of agricultural development. For agricultural development, irrigation is a fundamental requirement. Tahsil development currently relies heavily on agriculture. The Maharashtra district of Nashik includes Kalwan Tahsil. It spans an area of 89259.59 Hectares of land in the Nashik District in the western part of the Maharashtra state, between 20° 20' 15" and 20° 40' 23" North latitude and 73° 45' 6" to 74° 05' 22" East longitude. The population is 208,422, according to the 2011 Census. The Tahsil was divided into four income circles for administrative purposes, i.e., Kalwan, Mokbhanagi, Abhona, and Kanashi. Physiographically, Tehsil can be divided into the upper Girana Basin and the Sahyadri hill complex. Tehsil is governed by a regime of monsoonal deciduous forests. [24]

Rejula Kanampath, Rashmi Singh (2015). Contrasted with other Indian states, Kerala State is particular in its agro-climatic contrasts and editing designs. Worry over the climate and food security has expanded because of changes in Kerala's territory use and editing designs. The ongoing review sees changes in Kerala's territory use designs and trimming patterns somewhere in the range of 2001 and 2012. Significant food and non-food harvests' optional measurements on grounds, creation, and efficiency were assembled from different sources. For the period 2001-2012, the accumulate yearly development rate and the Cuddy-Della Valle insecurity record were processed to survey the development and shakiness of the harvests. Every year, the state's yield expansion record is determined. The investigation discovered that areas of land that are thought of as cultivable waste, neglected other than current decrepit, and current decrepit experienced positive region increments. Also, it was shown that elastic (1.07%) and banana (1.53%) displayed the most elevated paces of positive region development. Rice (4.01%), tapioca (3.83%), and plantains (1.01%) among food crops all showed negative area growth. In terms of Kerala's ability to feed its people, the fact that rice production and area

both experienced negative growth is troubling. Conclusion: The total area under cultivation in Kerala is declining, and food crops are more severely impacted than non-food crops. Crop diversification indexes also indicate a tendency in the state toward increased monocultures that favour non-food crops. [25]

Vijay Paul Sharma (2015). Every agrarian economy that is undergoing significant urbanization and industrial growth has a public discussion about the conversion of agricultural land for non-agricultural purposes. Due to widely divergent perspectives on the scope of agricultural land appropriation as well as the reasons for and socioeconomic effects of agricultural land loss, the topic has, however, grown more complicated and politicized in India. It is generally accepted that enormous scope change of agrarian land to non-horticultural purposes has occurred, and the issue of corporate securing of huge plots of ripe land and the dislodging of ranchers, farming laborers, and other rural networks has become essentially more political than financial. We inspect whether the view of land use rivalry are harmonious with experimental information and pinpoint the essential factors that add to the deficiency of farming area. As per current realities, rural land change has heightened to a critical issue from one side of the country to the other; be that as it may, the seriousness and extent of the issue contrast by state. Net planted region diminished by generally 1.8 million ha between triennium finishing (TE) 1991-92 and TE 2011-2012, while it moved in certain states, like around 20 lakh ha in Rajasthan and 9.5 lakh ha in Gujarat. Contrasted with this, Odisha lost almost 17 lakh ha of net planted region, trailed by Bihar (counting Jharkhand) at 12.4 lakh ha, Maharashtra at 7.6 lakh ha, Tamil Nadu at 7.1 lakh ha, Karnataka at 3.1 lakh ha, Andhra Pradesh at 2.7 lakh ha, and West Bengal at 2.6 lakh ha. As opposed to mainstream thinking, only one state — Gujarat — has had the option to expand its in general rural region by around 3 lakh ha throughout the course of recent years. Practically all states had an ascent nearby under non-farming purposes, which went from 21.3 million ha in TE1991-92 to 26.3 million ha in TE2011-2012. The exploration discoveries showed that the main variables influencing rural land were urbanization, the expansion in street foundation, and modern development. Subsequently, to forestall the transformation of rural land, great preparation, the executives, and a strategy system are required. It is urgent for the profitability and maintainability of the country to deal with the urbanization cycle, modern development, and infrastructural extension such that jelly

significant rural land and utilizes dry, unusable badlands (around 17.2 million ha). In this manner, it is important to confine the utilization of farming area for non-agrarian purposes (for the most part modern homes) and to appropriately plan and implement land use rules. There ought not be any justification for caution or smugness considering ongoing and current examples in land use for farming and non-agrarian purposes. In any case, to address land use clashes and the concurrence of horticulture and other non-agrarian exercises, vital arranging that stays away from land use struggle by recognizing regions, principally bone-dry and uncultivable badlands, for non-rural exercises, for example, metropolitan and modern development and safeguarding useful ranch lands is required. The issue of small and scattered ranches underscores the need of reevaluating tenure guidelines to raise the genuine homestead size. [26]

R. P. Sharma et al. (2015). With the growing number of people and animals, the demand for land resources has multiplied. One justification behind the infringement on neglected and badlands was meeting the necessities of this quick growing populace, yet the charm of money crops under the Green Unrest slowly turned into a significant driver in their ruin. In this way, for researchers, organizers, directors, and ranchers to guarantee food, water, and ecological security for the present and people in the future, productive administration of land and water assets is a critical issue. As the requests from the quickly developing human and animals populaces began to outperform the inventory, the impacts of complete negligence for the customary strength of the animals area, as well as disregard towards a sustainable horticultural information the executives strategy, began to become obvious. These difficulties were likewise welcomed on by the new worldview of yield strengthening interceded by the Green Upheaval. The most ideal way to utilize the dirt asset evaluations is to make a reasonable horticultural land use plan for a cultivating local area. The strategies of farming area use arranging are tended to in the ongoing paper with a contextual investigation of Bhilwara. To make a sustainable land use plan, the region of Bhilwara's dirt assets were assessed. The review region is separated into three physiographic units, to be specific 11 blocks: the Aravalli (11.36%), the Vindhyan scene (76.2%), and the eastern plain (76.2%). The dirt assets were analyzed and separated into 40 series. The locale encounters yearly precipitation somewhere in the range of 600 and 900 mm, with a PET of 1380 mm. As indicated by the imperatives of the geology (incline, disintegration,

stoniness), soil (profundity, surface, PSC, AWC), fruitfulness (pH, natural carbon, CaCO₃), saltiness (EC, ESP), and geography (slant, disintegration, stoniness), the dirt of the Bhilwara area have been assessed for horticultural land use anticipating Kharif and Rabi crops as well as other improved utilizes. [27]

Geetika Rathee (2014). Land is an essential natural resource and a key factor in the economic and ecological wellbeing of a nation. Given that there is a limited supply of land resources, managing and using them sustainably is essential for a nation's population's welfare. Wide-ranging effects of land-use change include the ability to affect national food security, economic growth, quality of life, and resource management. The causes of land-use change are influenced by the socioeconomic priorities of a nation at any particular time. India is pushing its industrial and service sectors to improve the environment for the production and consumption of goods and services because it is a developing nation. As is well known, urban areas are preferred locations for the consumption and production of a significant number of these commodities and services. Nevertheless, the link between economic growth and urbanization is the foundation for any country's economic development, even if it is not well established. It is for this same reason that India and many other emerging nations have made urbanization a key component of their national development plans. More changes in land use are occurring as a result of increased urbanization to keep up with changing expectations and needs. This chapter examines some of the land-use changes that have occurred as a result of a renewed emphasis on urbanization in the nation's development plan by examining land-use statistics at the national level and in significant metropolitan areas. The five-year budget priorities for various sectors are mapped with the land-use changes that took place between 1950 and 2010 in the chapter's first section. To determine an empirical association between various land-use categories, a regression is conducted. The study made it easier to determine how these changes would proceed. An examination of land-use changes over the past 10 years for six major metropolitan areas in the nation follows, which reveals the magnitude of urbanization's impact on land-use. The challenges and worries that have surfaced as a result of present land-use trends are highlighted in Section 3. The chapter ends with a few speculative policy alternatives that might help address the problems and worries that have surfaced. [28]

CONCLUSION:

The drivers of global change, such as population growth, shifting dietary preferences, and climate change, must be addressed through agricultural systems. Future changes to the food production process could, however, collide with other UN sustainable development objectives, such as the preservation of lands and the reduction of climate change. Studies that examine land use changes are extremely relevant given how crucial they are for the earth's functioning. Connecting land use changes to their fundamental causes is vital while concentrating ashore use change. Through the control of the biophysical states of the land, these driving elements (like populace development or development), intervened by the financial setting (like the market economy or asset establishments), and affected by the ongoing natural circumstances or setting, bring about changes in land use. Making arrangements for land use and the sustainable administration of assets will enormously profit from a comprehension of examples in land use change in association with the driving causes.

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