

General Land Use with Broad Categories of Land Use and Changing Pattern Over Time, of Katwa Subdivision, Purba Bardhaman, West Bengal, India

Tapas Kumar Ghosh, Prof. Parbati Nandi.

Seacom Skills University.

DOI: <https://doi.org/10.51583/IJLTEMAS.2025.1406000119>

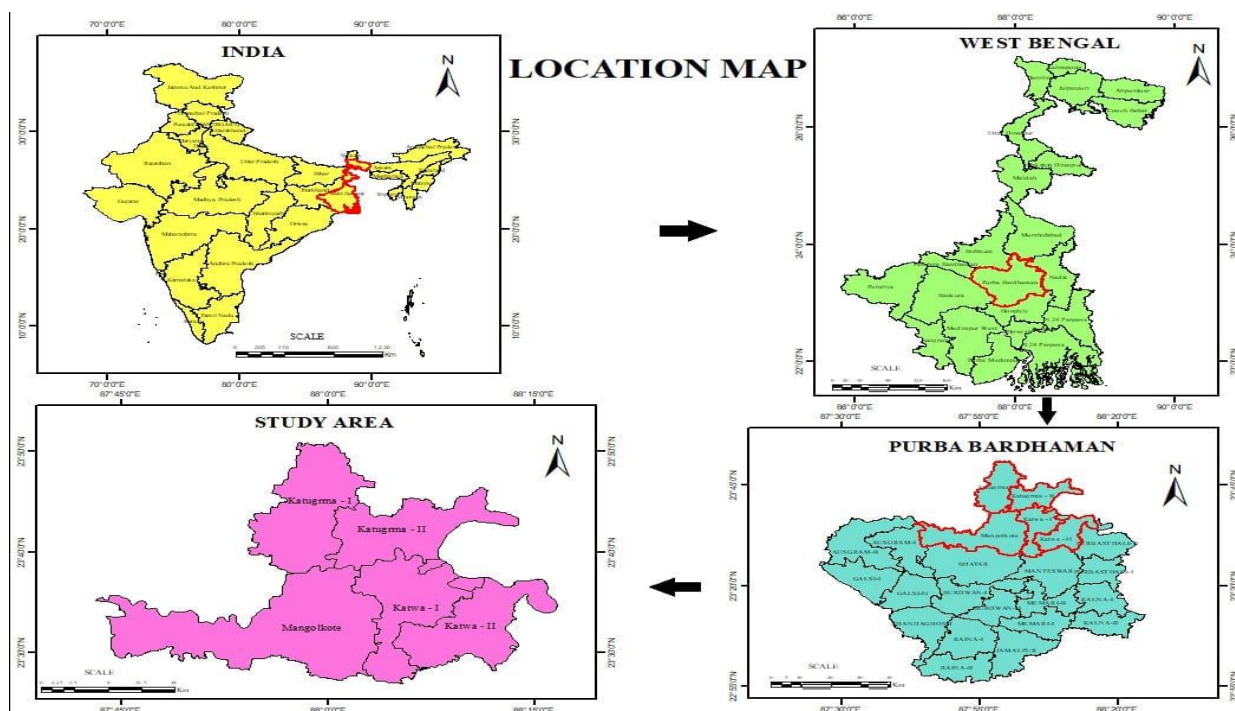
Abstract: Land use means the use of land. Land use is any sort of permanent or cyclic human interference to satisfy his demand. Land use is the application of human controls systematically to the key elements of any ecosystem tries to manipulate it. Land use is intimately linked with advanced technology. It is impossible to grow crops on dry poor humus desert soil but after large scale reclamation it is possible. There is close relationship between man and land. The relationship can be expressed as – i) man is treated as social being and the land as inexhaustible resource, ii) the land and the person who use it, iii) man's influence on land use as a means of production. Land use mainly deals with the problems of the regions. It is mainly confined to the optimum use of limited land among the alternative major type of land use. Infrastructural and institutional factors play an important role in determining land use. The land use is mainly the use in which the land in a certain area is put in a specified time. Land use creates continuous field of tension between human desire and existing available resources.

Key Word: Land Use, Changing Pattern, Human Interference, Ecosystem.

I. Introduction:

The lower portion of *Bhagirathi* basin lies in West Bengal. It is a flat, fertile stretch of land, made of layers of alluvial soil. The plane landscape is uneven and broken by hills ridges. The agricultural economy of the lower valley, despite being based on subsistence farming and uneconomic holdings is relatively more productive compared to that of the upper valley .with the growth of townships within the region the productivity consciousness of the cultivators has grown in view of ready available markets for surplus agricultural commodities. The intensity of agricultural land use in *Bhagirathi* and *Ajay River* Basin Area is highly variable. But the study area lies in *Purba Bardhaman* district, is almost plane land consisting *Katwa* Subdivision. The main key points of land use have been discussed how?

My Study Area: Purba Bardhaman district was formed on 7 april 2017 after bifurcation of the erstwhile Bardhaman district and its headquarters is Bardhaman. Some historians link the name of the district to the 24th and last Jain tirthankara, Mahavira Vardhamana, who came to preach in the area. It was a forward frontier zone in the progress of Aryanisation by the people in the upper gangetic valley. Purba means east. Bardhaman district was bifurcated into two districts, Purba Bardhaman and Paschim Bardhaman.



Use and Distribution of land 2018

Katwa subdivision is an administrative subdivision of the Purba Bardhaman district in the state of West Bengal, India. This subdivision is located 23.65N and 88.13E. The Katwa subdivision extends from the Kanksa-Ketugram plain to the Bhagirathi basin. The ajay river flows through the subdivision and joins the Bhagirathi river. Purba Bardhaman district is divided into the five administrative subdivision such as (1) Bardhaman sadar north, (2) Bardhaman sadar south (3) Katwa (4) Kalna (5) Purba Bardhaman district.

Katwa subdivision has 3 police station, 5 community development blocks, 5 panchayat samitis, 46 gram, 388 mouzas, 373 inhabited village, 2 municipalities and 1 census town. The municipalities are Katwa municipalities and Dainhat municipalities, the census town is Panuhat. The subdivision has its headquarters at Katwa.

BLOCKS	net cultivable area	Cultivable waste land	of Vested land	Area in which more than one crop grown.	Net-area sown
MONGALKOTE	698.76	3.74	0.44	.98	453.79
KETUGRAM-1	522.16	2.92	0.40	.92	455.38
KETUGRAM-2	546.24	1.94	0.35	.86	457.37
KATWA-1	490.39	0.58	0.18	.80	400.03
KATWA-2	512.41	0.25	0.10	.91	400.04

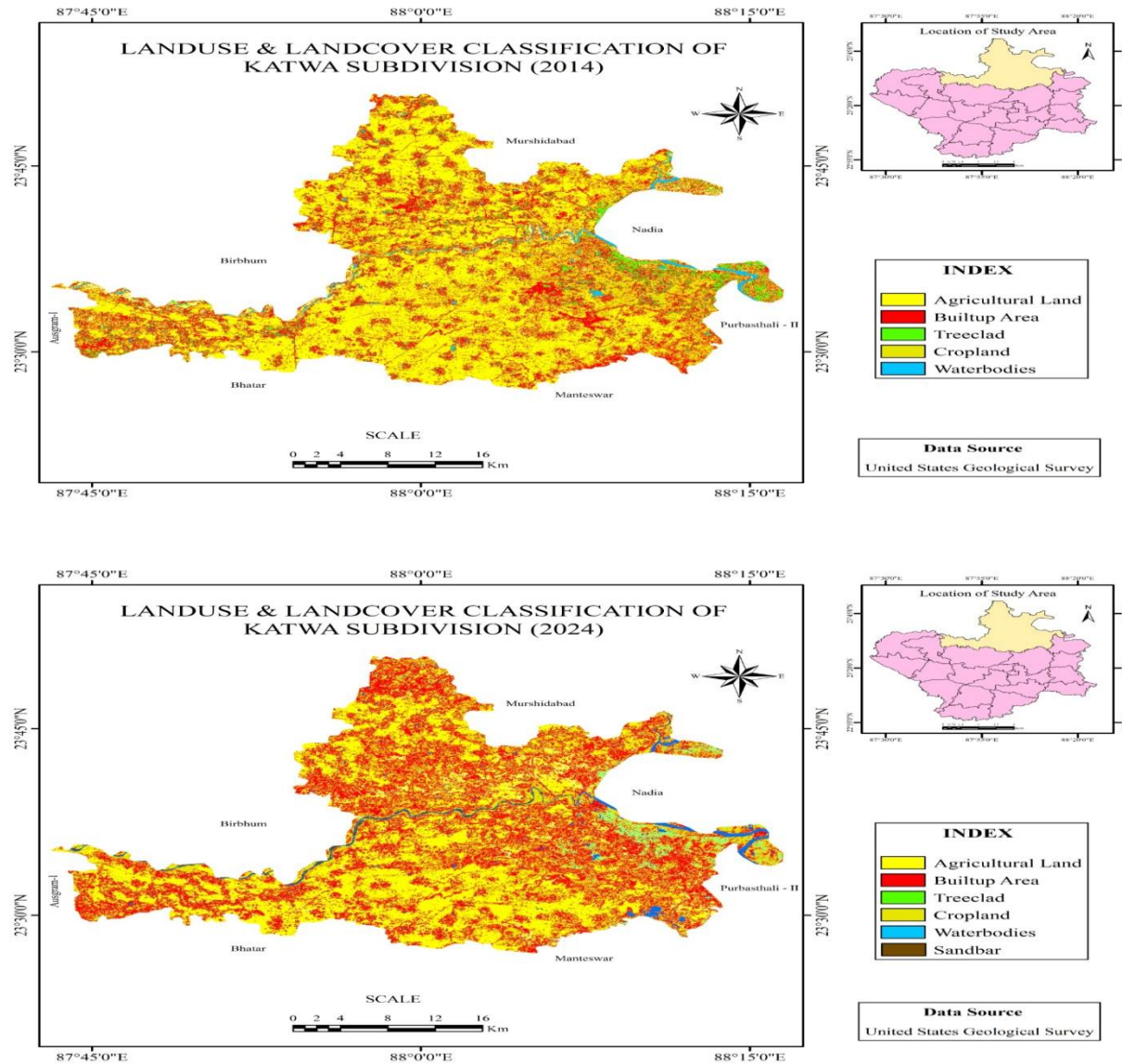
Source: 1) Principal Agriculture Officer, 2) Agriculture Development officer, 3) Block Land & Land Reform Office, Purba Bardhaman
Use and Distribution of land 2018

BLOCKS	FOREST AREA	AREA UNDER NON AGRICULTURAL USE	FALLOW LAND	CURRENT FALLOW	AVERAGE SIZE OF HOLDING
MONGALKOTE	21.16	219.19	1.09	3.31	1.00
KETUGRAM-1	21.17	214.66	0.80	2.48	1.03
KETUGRAM-2	21.16	215.13	0.36	1.57	1.32
KATWA-1	14.54	120.67	0.07	0.42	0.97
KATWA-2	14.54	120.99	0.08	0.39	0.86

Source: 1) Principal Agriculture Officer, 2) Agriculture Development officer, 3) Block Land & Land Reform Office, Purba Bardhaman.

Land Use Changes in Time to Time: Agricultural activities are dominant in the blocks of the study area. It has been found from the observation of 2017-2018. Use and Distribution of land 2017-2018. Use and Distribution of land 2017-2018, that the percentages of net cultivated area are 613.71 in Purba Bardhaman. In both cases the percentage remain unchanged. In all blocks of the study area the percentage of cultivated lands are maximum in comparison to other types of land use which has been concentrated more in left bank and comparatively less in right bank. It may be said that agriculture is the main land use of the entire region.

Researcher Described 2004, 2014, and 2018 land use changes in study area, in different figure. It is a major problem in our country. There are great relationships in increase of population and decrease of agricultural land in my country day to day. Wasteland is the land that is barren or ravaged; it is a condition mainly caused due to water logging, flood, dumping of toxic waste etc. which finally results into the degradation of the nutrients of the soil resulting into making it unusable for farming or cultivation. Waste lands are one of the most important ecosystems on the earth. It was the swampy environment of the carboniferous period which produced and preserved many fossil fuels of economic importance. Sometimes wetlands are described as “the kidneys of the landscape” due to their functions which they perform in the hydrological and chemical cycles as the downstream section receives wastes from both natural and human sources. It may be mentioned that wetlands clean polluted waters, recharge ground water aquifers, prevent floods, protect shorelines etc. In addition, they play a vital role in landscape by providing unique habitats for a large variety of flora and fauna as well as fish and wildlife protection. The values of wasteland are widely being recognized today with increasing population which needs protection laws, regulations and management plans or strategies. With the increasing importance of wetland, especially from the ecological viewpoint, scientists from different disciplines, engineers, lawyers and regulators are being actively involved in wetland research (Mitch and Gosselink 1986). Settlement, locality or populated place are general terms used in statistics, archaeology, geography, landscape history and other subjects for a permanent or temporary community in which people live or have lived, without being specific as to size, population or importance. A settlement can therefore range in size from a small number of dwellings grouped together to the largest of cities with surrounding urbanized areas. The term may include hamlets, villages, towns and cities. The term is used internationally in the field of geospatial modeling, and in that context is defined as “a city, town, village, or other agglomeration of buildings where people live and work”.



II. Salient Features of Landuse In the Study Area

Maximum land of the area is used as net sown area that reveals a strong agricultural economy of the district. So, the net sown area is the dominant land use type, however, it has shown declining trend since.

Second important land use type of the district is areas under non-agricultural use, this land use type is increasing rapidly because of population pressure and demands in recent years, even at the cost of the net sown area. Urbanization and industrialization have caused increase complexity resource on this land use pattern of the district.

Total land use under forest and miscellaneous tree covered area is meager in the district. It is only less than 1 percent which is far behind from the national objective of putting 33.3 percent of the total land area under forest. The trend of this land use also shows a remarkable of decline in nature. Therefore, effective steps should be taken in this regard by the government through various Gram- Panchayat.

The percentage of fallow land and areas under others use of total reporting area of the district is less and their declining trend however indicates its reclamation for agriculture and other activities. Area under fallow land is more prominent in the blocks situated in western portion of the district.

III. Conclusion

Rural land transformation, spearheaded by urbanization, drawing attention of policy makers in the recent decades. This research focusing on the current discourse of rural land use change. This research also holds relevance in the context of achieving the sustainable development goals, which are vital for a developing economy like India.

References

1. Battese, G.E. and Fuller, W.A. 1972. 'Determination of Economic Optima from Crop- Rotation Experiments', *Biometrics*, 28(3):781-792.
2. Bhatia, S.S. 1965. 'Patterns of Crop Concentration and Diversification in India', *Economic Geography*, Clark University, 41(1):39-56.
3. Blanco-Canqui, H. and Lal, R. 2004. 'Mechanisms of Carbon Sequestration in Soil Aggregates', *Critical Reviews in Plant Sciences*, Taylor & Francis, 23(6):481- 504, DOI: 10.1080/07352680490886842.
4. Brust, G. E. and B. R. Stinner. 1991. 'Crop rotation for insect, plant pathogen, and weed control', in D. Pimentel, (ed). *Handbook of Pest Management in Agriculture*, 2nd edition. CRC, Boca Raton, FL: 217-236.
5. Chattopadhyay, M. 1984. 'Transformations of labour use in Indian agriculture', *Cambridge Journal of Economics*, 8(3): 289-296.
6. El-Nazer T. and McCarl B.A. 1986. 'The Choice of Crop Rotation: A Modelling Approach and Case Study', *American Journal of Agricultural Economics*, Oxford University Press, 68(1):127-136.
7. Editorials, 2002. 'Problems in Punjab', *Economic and Political Weekly*, 37(29):2969. Husain, M. 1996. *Agricultural Geography*, Rawat Publications, Jaipur: 213-251.
8. Jodha, N. S. and Singh, R. P. 1990. 'Crop Rotation in Traditional Farming Systems in Selected Areas of India', *Economic and Political Weekly*, 25(13):A28-A35. Johnston, B. F. and Mellor, J. W. 1961. 'The Role of Agriculture in Economic Development', *American Economic Review*, Vol. 51, in Kurosaki T.
9. 2002. 'Agriculture in India and Pakistan, 1900-95: A Further Note', *Economic and Political Weekly*, 37(30): 566-93.
10. Liebman, M. and E. Dyck. 1993. 'Crop rotation and intercropping strategies for weed management' *Ecol. Appl.* 3:92-122. In: Brainard, D.C., Bellinder, R.R., Hahn, R.R. and Shah, D.A., (2008). *Crop Rotation, Cover Crop, and Weed Management Effects on Weed Seed banks and Yields in Snap Bean, Sweet Corn, and Cabbage*, *Weed Science*, 56(3) pp. 434-441, Retrieved on 16-02-
11. Lin, B.B. 2011. 'Resilience in Agriculture through Crop Diversification: Adaptive Management for Environmental Change', *Bio-Science*, 61(3), Oxford University Press.
12. Metzel, J. & Ateng, B. 1993. 'Constraints to Diversification in Bangladesh: A Survey of Farmers' Views', *Bangladesh Institute of Development Studies*, Retrieved on 16-02-2016 12:47 UTC.
13. Paul, A. 2015. *Banglar Krishi O Krishak Samasya O Sombhabana*, Naya Udyog Publication, Kolkata.
14. Quasem, A. and Rahman, L. 1993. 'Agricultural Research and Crop Diversification in Bangladesh', *Bangladesh Institute of Development Studies*, Retrieved on 16-02-2016 12:39 UTC.
15. Sidhu, R. S. and S.S. Johl, 2002. 'Three Decades of Intensive Agriculture in Punjab: Socio-Economic and Environmental Consequences' In: Johl, S. S. and Ray, S. S. (eds.), *Future of Punjab Agriculture*, Centre of Research in Rural and Industrial Development, Chandigarh.
16. Singh, J. and Sidhu, R.S. 2004. *Factors in Declining Crop Diversification: Case Study of Punjab*, *Economic and Political Weekly*, 39(52).
17. Singh, J. and Dhillon, S.S. 1984. *Agricultural Geography*, Tata McGraw-Hill, Delhi.
18. Singh, J., G. S. Dhaliwal, and N. S. Randhawa 1997. *Changing Scenario of Punjab Agriculture: An Ecological Perspective*, Centre for Research in Rural and Industrial Development, Chandigarh.
19. Singh, J. and Sidhu, R.S. (2004). *Factors in Declining Crop Diversification: Case Study of Punjab*, *Economic and Political Weekly*, 39(52).
20. Snapp, S.S., Blackie, M.J., Gilbert, R.A., Bezner-Kerr, R., Kanyama-Phiri, G.Y. and Kates, R.W. (2010).
21. Biodiversity can support a greener revolution in Africa Source: *Proceedings of the National Academy of Sciences of the United States of America*, 107(48).
22. Sumner, D. R. 1982. Crop rotation and plant productivity, in M. Rehgigl, ed. *CRC Handbook of Agricultural Productivity*, Boca Raton, FL: CRC:273-313.
23. Tangle, L. 1987. 'Beyond the Green Revolution', *Bio-Science*, Oxford University Press, 37(3).
24. Taylor, D. C. 1994. 'Agricultural Diversification: An Overview and Challenges in ASEAN in the 1990s', *ASEAN Economic Bulletin*, 10(3), Institute of Southeast Asian Studies.
25. Thapar, R. 1973. *Backwash of Green Revolution*, *Economic and Political Weekly*, 8(34).
26. Vandermeer, J., van Noordwijk, M., Anderson, J., Ong, C., and Perfecto, I. 1998. 'Global change and multi-species agro-ecosystems: Concepts and issues'. *Agriculture, Ecosystems and Environment* 67(1):22.
27. Weaver, J.C. 1954. 'Crop-Combination Regions for 1919 and 1929 in the Middle West', *Geographical Review*, American Geographical Society, 44(4).
28. Zohir, S. 1993. 'Problems and Prospects of Crop Diversification in Bangladesh', *The Bangladesh Development Studies*, 21(3).