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"Colonialism was an ecological watershed". Critically discuss this proposition, using the following material and examples discussed in class.

Patterns of resource usage and approaches towards the same hold the key to understanding Colonialism in India for the 'ecological watershed' that it was. We are discounting here the assumption that the actions of those before us were centred around preservation of the environment. It is much safer to assume – and evidence does point to this – that people live(d) with the motivation of surviving and flourishing, adjusting to the environment where beneficial, and taking it on where hostile. Therefore, the people of Southern Bihar did not construct "Ahars" and "Pynes"[1] specifically because it was a sustainable water collection method, but rather because it was an effective, efficient method that exploited natural drainage patterns to meet reasonable irrigation needs.

So, what makes the advent of Colonial Rule a 'watershed moment' for Indian ecology? The reason may be found in the Imperial State's self-anointed role as a major source of socio-economic change. Where previous rulers, invaders, and common people alike made a living following pre-existing local practices, remaining largely ideologically similar to those before them, the Empire brings with it an entirely **new ideology** of resource use and yield maximization. More specifically, one can pinpoint three major changes that lead to this watershed moment:

- **Commodification of nature as a 'resource'** enables and encourages exploitation beyond means

[1] Radhakamal Mukherjee and Nirmal Sengupa, 'The Basis of Community' and 'Technology, Management and Control', Social Ecology (New Delhi: Oxford University Press, 1994), 120-131.

- **Large-scale centralised projects without local specificity** fail to accommodate for local ecological phenomena that indigenous versions of the same could better deal with
- **A change in human-animal relationships**, where the Imperial State switches from extreme to extreme on how they should be dealt with

While the ideological shift affected the ecology via multiple channels, we shall focus primarily on the perspective to water, with a slight aside into human-animal relationships.

A general note on commodification and resource use

Commodification of Nature as a resource is the primary argument to be made about Colonialism as the watershed moment in the ecology of India. While a lot of issues stem from the inability of the Centre-heavy Empire to consider local conditions and adapt to them, the goal of maximising short-term rewards is the central concern. Be it promoting the production of "valuable" crops like sugarcane, wheat, and indigo over regular staple[2], or the classification of uncultivated lands as "wastelands" and their subsequent conversion to cultivated area, or the conversion of nomadic tribes to settler-agricultural societies, multiple widespread changes contributing to the ecological crisis stem from the freshened perspective on the environment.

As such, every action listed below with consequences, intended or otherwise, are a direct consequence of this desire to maximise trade, to maximise cultivated area, agricultural output, and revenue returns.

Canal Irrigation is (not) the Messiah

The focus of our analysis, water usage as a resource, requires an examination of the widespread Canal Irrigation System as introduced by the British. Introduced in order to accomplish year-round consistent irrigation that did not rely on seasonal rains, the system was championed extensively by the Empire, and introduced across the country without much care for ecological specificity – the soil of the area, the water table, local drainage patterns – at the cost of pre-existing indigenously developed irrigation schemes. The system had the goal of increasing net cultivated area, agricultural output, trade, and

[2] Elizabeth Whitecombe, 'Canal Irrigation and Ecological Change in Colonial North India', Social Ecology (New Delhi: Oxford University Press, 1994), 132-149.

revenue returns; initial records indicate some level of success[3].

The Motivation behind Canal Irrigation

The Colonial Empire wanted year-round irrigation in order to grow water-heavy crops like wheat, sugarcane, opium, and indigo: incredibly valuable crops that could be used for trade, as well as for improved revenue collection. Wheat especially – James Scott comments on the widespread use of wheat as a consolidating crop for States across the world, due to its large yield and easily taxable nature[4] – even though wheat was not a staple food grain; *kharif* crops like *jawar* and *bajra* were. The construction of canals by the State as a central project also helped consolidate its presence, emphasising its "soft power" over the populace.

How Canal Irrigation transformed Agriculture ...

Reduced labour requirements Unlike well cultivation, which was "as effective, if not more" than canals, canals needed very little labour input in order to irrigate the fields. Where in a traditional system a farmer would spend a significant amount of time and energy irrigating the crops and less so planting, canals enabled them to put less time and effort into the irrigation itself, allowing them to grow on larger areas, and with fewer cattle.

The death of Wastelands The Colonialists' focus on maximising resource usage also meant that the area under grazing lands, or "Wastelands", quickly diminished in favour of agricultural activities.

Systematic destruction of traditional, indigenous irrigation Where canal irrigation flourished, traditional irrigation methods fell into disuse and disrepair. Requiring regular maintenance but without any care, there was a slow but systematic destruction. Farmers began depending entirely on canals.

Crops serviced by the system, and what was left out The British preferred to grow "Valuable" crops (wheat, sugarcane, indigo, opium) preferred over staple produce. Being crops with a heavy water-requirement, canal water, when there was a shortage, would water those rather than what the other farmers grew. The land that would have been used for staple grains was now taken up by "valuable" crops, leading to less land now available for staple produce. When drought hit, they were far more severely impacted.

Double, and even triple cropping gets in vogue Due to surplus of water.

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[3] https://dsal.uchicago.edu/statistics/ have detailed statistics

[4] "Art of Not Being Governed | Yale University Press." https://yalebooks.yale.edu/book/9780300169171/art-not-being-governed. Accessed 6 Feb. 2020.

... and how this transformation affected the Ecological Balance

Soil Infertility

After a couple of years of improved output, crop production per unit area took a *hit*: due to **insufficient manure** being one of the factors. With fewer cattle and greater area under cultivation, soil fertilization took a hit.

Meanwhile, due to the sheer quantity of sitting water that the "high value" crops needed and the inadequacy of soil in many places, whatever soil was there **got heavily salinated**. Happening over multiple areas in a widespread region, this was cause for worry, especially as:

The soil got absolutely **no rest** due to the pattern of double and triple cropping. With a crop in summer, and in winter, and one in between, the soil of the area got no time to regain its nutrients, leading to poorer produce each year.

Downfalls of Ecological Nonspecificity

Floods and Swamps

Canal construction was done without any concern for drainage patterns, at least initially. As an effect, **floods** were a far more common occurrence in time. Other than the impact on human life and damage to agriculture, it also led to **swampification** of the land, further modifying the climate itself - with increased humidity.

Percolation and Salination

On occasion, sitting water in the canals seeped into the neighbouring soil due to non-consideration for soil composition, leading to increased salination and a much higher water table.

A Western model of Human-Animal Relationships

Traditional human-animal relationships have never been "rosy" in the slightest - Elephants trample over crops, tigers take away cattle, and so on. Traditional methods of dealing with them were, however, done on a case-by-case basis: Rulers hunted to kill specific man eating animals, for instance, in order to help expand agriculture.

With Colonial rule came the first instance of State-sponsored projects to eliminate carnivores[5], by incentivising people with awards given in cash.

Once the narrative around animals shifted towards conservation, a complete 180 was taken with the Biosphere Reserve approach to ensuring animal safety: with the concept of a "core area" with absolutely no human contact. Entire villages were eliminated to ensure the creation of such zones, changing the ecological balance of their earlier coexistence.

[5] https://dsal.uchicago.edu/statistics/1876_excel/1876.150.XLS

In summary, **in both approaches the idea of human-animal coexistence was entirely neglected.**

In Conclusion

From the evidence observed, it seems fair to claim that “Colonialism was an ecological watershed (in the history of India)”. Drastically changing agricultural patterns, climate, environment, soil type, and human-animal relations testify to such.