



NATURE, RAW MATERIALS AND POLITICAL ECONOMY

Research in Rural Sociology
and Development
Volume 10



Edited by
Paul S. Ciccantell
David A. Smith
and Gay Seidman

NATURE, RAW MATERIALS,
AND POLITICAL
ECONOMY

RESEARCH IN RURAL SOCIOLOGY AND DEVELOPMENT

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RESEARCH IN RURAL SOCIOLOGY AND DEVELOPMENT
VOLUME 10

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NATURE, RAW MATERIALS, AND POLITICAL ECONOMY: AN INTRODUCTION

Paul S. Ciccantell and David A. Smith

ABSTRACT

In this introductory chapter, we briefly outline the history of the political economy of raw materials, focusing particularly on the relationship between raw materials and economic development. We then introduce the chapters of this volume, and we conclude by discussing future directions for research in this area.

1. INTRODUCTION

At the beginning of the twenty-first century, nations, economies, and people around the world confront tremendous environmental challenges. Conflicts in oil-producing areas threaten production and increase prices at the same time that many argue that global oil supplies have begun a long-term decline. Access to water drives growing numbers of social and military conflicts. International efforts to address global warming falter as major polluting nations withdraw from the Kyoto Protocol. Deforestation in the rainforests of Southeast Asia, Africa, and the Amazon threaten to change

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global weather patterns and increase poverty in many of the world's poorest nations. Even the world's fastest growing economy, China, faces mounting resource shortages and pollution problems that may choke off national and, as a result, global economic growth as well. How can we make sense of the increasing complexity of the interdependence between society and nature and the growing severity of the resulting environmental, economic, and social problems? The chapters in this volume present theoretical and empirical approaches to these problems that can help inform social science analysis of and public policy toward the relationship between society and nature.

We have three aims in this introductory chapter. We will first briefly outline the historical evolution of the political economy of nature and raw materials, highlighting the critical place that understanding the relationship between society and nature plays in the origins and ongoing theoretical developments in this field. We then introduce the overall structure of this volume and the individual chapters, describing the key concerns and themes that guide this research in the diverse industries, nations, and natural conditions that these chapters analyze. Finally, we will discuss some directions for future research that emerge from these works and the critical issues regarding the nature–society relationship that are apparent in the world economy today.

2. THE POLITICAL ECONOMY OF NATURE AND THE CONCEPT OF RENT

Political economy analysis beginning with Adam [Smith \(1776\)](#) and David [Ricardo \(1817\)](#) focused on issues of natural wealth and its consequences for national development. Both analyzed the impacts of the huge flows of silver and gold from the Spanish and Portuguese colonies in the Americas on trade, money supply, and investment in Europe. The arguments presented for the gains from free trade and specialization in the areas in which nations held comparative advantages rested on the recognition that nations differed in their natural and other material characteristics (e.g. population, geographic size, access to oceans, etc.).

In order to understand the contribution of differential endowments of natural resource wealth and quality in mineral deposits and agricultural productivity, early political economists developed the concept of rent to explain the wealth that accrued to property owners from these differences in

natural wealth. Ricardo defined rent as “that portion of the produce of the earth, which is paid to the landlord for the use of the original and indestructible powers of the soil. It is often, however, confounded with the interest and profit of capital” (Ricardo, 1817, p. 91). The relationship between society and nature, as these early political economists recognized, is a critical element of political economic analysis, despite arguments about “dematerialization”, the “new economy”, and globalization today that largely ignore issues of matter, space, and nature–society relations and how these issues continue to shape political economy (Herman et al., 1989; Bunker, 1996). As the chapters in this volume will show, even some of the most global industries remain profoundly rooted in and shaped in critical ways by the natural production systems on which they depend.

Many analysts in different theoretical traditions utilize the concept of rent and the ways in which it is distributed among various social groups as an analytical tool. Marx recognized that “nature” played an essential role in the capitalist mode of production and, indeed, in *any* human production process, but “nature” is a problematic concept. For Marx, relations between humans and “nature” are mediated by the human labor process: “labour is, first of all, a process between man and nature, a process by which man, through his own actions, mediates, regulates and controls the metabolism between himself and nature” (Marx, 1977, p. 283).

“Nature” also enters the production process in another fundamental way: “we may include among the instruments of labour...all the objective conditions necessary for carrying on the labour process. These do not enter directly into the process, but without them it is either impossible for it to take place, or possible only to a partial extent. Once again, the earth itself is a universal instrument of this kind, for it provides the worker with the ground beneath his feet and a ‘field of employment’ for his own particular process” (Marx, 1977, p. 287). Marx thus defines “nature” transhistorically as, first, an essential underlying condition of production as the *location* of production, second, as the source of *natural products*, and, third, as the original source of materials which are converted into raw materials for use by industry through the labor process. Humans and their productive processes are *not*, however, *separate* from “nature”, as the conventional economics framework maintains. Humans are a part of Marx’ “nature”, but a part which has a tremendous capacity to *transform* this “nature” as a result of conscious labor.

Wittfogel (1985) extends Marx’ conception of the relationship between humans and “nature” and the particular form that this relationship takes in the capitalist mode of production. First, Wittfogel argues that “the

significance of the natural factor grows together with the social conditions (powers) of the process of production” (Wittfogel, 1985, p. 47). The development of industrial production in the capitalist mode of production increased the need for raw materials to the highest level in human history.

Second, Wittfogel argues that “changes in scientific insight and technological practice can thus continually bring new kinds and sites of raw materials to the fore, replacing the old as obsolete and outworn. But this change in the concrete form of application does not invalidate the principle of the fundamental importance of sources of raw material, their ‘location’, and thus the necessity for capitalism to struggle for their control. It is precisely because of this dynamic character inherent in raw material (not by ‘nature’ but by reason of the activity of social labor) that the struggle for sources of raw material (those already known and those which may possibly become significant in the future) in the age of imperialism so feverish and the goals of imperialist politics so boundless” (Wittfogel, 1985, p. 52). The depletion of sources of raw materials in the capitalist nations of Western Europe and the United States forced capitalists to look for more fertile sources in other areas, resulting in political and military conflicts.

Finally, Wittfogel provides an excellent solution to the problem of determinacy usually posed as humans versus “nature” as the key determinant of historical change: “if the totality of the powers of production determine the character of the mode of production at any given historical moment, it is the social aspects which (being the actively-motivating agents) determine change, whereas the naturally-conditioned agents determine whether and if change is possible and accordingly the direction of this change. *Even as man puts nature to his ‘service’, he thereby submits himself to nature (Plekhanov) and follows her*” (Wittfogel, 1985, p. 55).

Within the capitalist mode of production, the ownership of the natural means of production and sources of raw materials and the resulting extraction of rent by the landlord class presents a problem for the labor theory of value: how are these natural products assigned prices? Marx’ analysis of the internal dynamics of the “pure” capitalist mode of production in Volume 1 of *Capital* ignored this problem, but this problem was very prominent in discussions of agriculture during the eighteenth and nineteenth centuries. In contrast to Volume 1’s model of a two-class mode of production in which the labor theory of value was the key dynamic, in Volume 3 Marx adds a third class, the landlord class, and introduces the concept of rent as this class means of expropriating a portion of the total surplus value from the capitalist class.

The members of the landlord class are defined by the ownership of private property in land: “landed property is based on the monopoly by certain

persons over definite portions of the globe, as exclusive spheres of their private will to the exclusion of all others” (Marx, 1967, p. 615). The key to analyzing this class “is to ascertain the economic value, that is, the realisation of this monopoly on the basis of capitalist production” (Marx, 1967, p. 616). The landlord class in the capitalist mode of production in England emerged from the destruction of the feudal mode of production. Under capitalist agricultural production, landed property no longer controlled workers tied to the land or even the means of production; this control passed to capitalist tenant farmers. These capitalist tenant farmers introduced rapid technological innovation and produced large agricultural surpluses using wage laborers. The landlords received ground-rent in return for the use of this natural means of production, the land.

Marx refutes claims by “bourgeois economists” that this ground-rent is in fact a form of *interest* and *not* an important phenomenon in its own right. Marx notes that, to an individual capitalist choosing where to invest a certain stock of capital, buying land and investing in order to receive interest *appear* as two equivalent alternatives. However, the *source* of the returns on capital invested in these two alternatives is quite different; investing for interest increases the stock of capital available for capitalist production, while receiving rent from land purchased results from the extraction of surplus value from the capitalist class. The landlord class is thus a distinct class with a distinct source of surplus value and is in conflict with the capitalist class over distribution of surplus value (Marx, 1967, pp. 622–624).

The rent appropriated by the landlord class takes three forms. The first form is Differential Rent I (DRI) which is equivalent Ricardo’s initial conception of rent. DRI occurs when leased natural means of production produces a surplus-profit for a capitalist tenant; this surplus-profit is “produced as a difference between the products of two equal quantities of capital and labour, and this surplus-profit is transformed into ground-rent when two equal quantities of capital and labour are employed on equal areas of land with unequal results” (Marx, 1967, p. 649). The unequal results of the application of equal amounts of capital and labor to equal amounts of land results from two causes: differential fertility between the two pieces of land, whether naturally produced or the result of previous investment in the piece of land; and the locational advantages of one piece of land over the other relative to the location of markets (Marx, 1967, p. 650). This DRI results from the process of formation of market prices for agricultural products. In contrast to capitalist industrial production, in which competition among producers forces the market price down to the social average price of production, the market price of agricultural products is the price of production

of the *highest* cost producer. This is true, however, only if the supply of the agricultural product is in rough balance with the demand for the product; excess production forces down prices to the cost of production of the highest cost producer whose production is needed to satisfy demand. Producers whose price of production is higher than this new regulator price are forced to sell at a loss or to stop producing. The market price is thus a *social* product, not a technical result; the exchange-value of the agricultural product determines its market price (Marx, 1967, pp. 658–661). DRI accruing to the owner of a particular piece of land is thus the difference between the price of production of the highest cost plot of land and the price of production of the lower cost piece of land owned by the individual landlord.

The second form of differential rent (DRII) is based on the DRI which accrues to investment to two plots of land of different fertility and location in the same time period. DRII accrues, however, over *more* than one time period because of differential distribution of capital and access to credit (Marx, 1967, pp. 676–677). The input of capital over time can increase the productivity of a piece of land and the amount of DRII that accrues to the landowner as the result of investments by capitalist tenants.

The third form of ground-rent, absolute rent, results directly from the definition of private property in land: “the mere legal ownership of land does not create any ground-rent for the owner. But it does, indeed, give him the power to withdraw his land from exploitation until economic conditions permit him to utilise it in such a manner as to yield him a surplus...he can change the quantity of land placed on the market...he does not lease his land until he can be paid lease money for it” (Marx, 1967, p. 757). Thus, Marx argues, “landed property itself has created rent” (Marx, 1967, p. 755). Absolute rent thus appropriated by landlords *appears*, Marx argues, as the equivalent of monopoly prices in capitalist industrial production, prices determined strictly by the purchasers’ willingness and ability to pay and not by the price of production or the value of the commodity. This is only one small part of the total absolute rent expropriated by landlords, however. The vast majority of absolute rent results from the lower organic composition of capital in agriculture relative to industry: “rent, then, forms a portion of the value, or, more specifically, surplus-value, of commodities, and instead of falling into the lap of the capitalists, who have extracted it from their labourers, it falls to the share of the landlords, who extract it from the capitalists” (Marx, 1967, p. 771).

Nwoke (1984) extends Marx’ concept of rent to the extraction of minerals in peripheral nations. Nwoke defines mining rent “as the difference between the market price of a unit of mineral resource sold in the form of finished

products and the total average costs incurred in discovering, producing, transporting, refining, and marketing the unit of that particular mineral resource. Total average costs are current costs, and include amortization and a fair rate of return required by a private firm in the minerals industries” (Nwoke, 1984, p. 42). The market price is defined as the production price of the highest cost producer needed to satisfy social demand. Differential rents occur because of differential natural productivity.

Harvey (1982) departs radically from Marx’ conception of the landlord class as a distinct class and the role of this class as mediating the relations between capitalist production and “nature”. Harvey begins by citing Marx’ discussion of colonies such as the United States in which landed property did not exist before the entrance of capitalism into the region; private property had a significantly different form in these colonies than it did in England (Harvey, 1982, pp. 345–346). Marx argued that “when the landlord is himself a capitalist, or the capitalist is himself a landlord... for him landed property does not constitute an obstacle to the investment of capital. He can treat his land simply as an element of Nature and therefore be guided solely by considerations of expansion of his capital, by capitalist considerations” (Marx, 1967, p. 751).

Harvey argues that this situation has increasingly become the norm in the capitalist mode of production. Land has become “a commodity of a rather special sort” whose ownership entitles the landlord to receive an annual rent; therefore, “any stream of revenue (such as an annual rent) can be considered as the interest on some imaginary, fictitious capital. For the buyer, the rent figures in his accounts as the interest on the money laid out on land purchase, and is in principle no different from similar investments in government debt, stocks and shares of enterprises, consumer debt and so on” (Harvey, 1982, p. 347). Land thus becomes a financial asset, investment in which is determined by expected future returns on this asset as opposed to expected returns on equivalent assets such as stocks. Landlords, rather than being a distinct class, become merely a part of the fraction of the capitalist class whose capital is invested as interest-bearing capital. Harvey argues that “the integration of landownership within the circulation of interest-bearing capital may open up the land to the free flow of capital, but it also opens it up to the full play of the contradictions of capitalism” (Harvey, 1982, p. 349).

Private property in land and rent for Harvey are the means of the social relations of the capitalist mode of production to *extend* their control over “nature”. “Nature” is subordinated to the interests of individual capitalists and to the working out of the contradictions of the laws of motion of