IOSR Journal Of Humanities And Social Science (IOSR-JHSS)
Volume 24, Issue 2, Ser. 9 (Feb. 2019) 67-70
e-ISSN: 2279-0837, p-ISSN: 2279-0845.
www.iosrjournals.org

An Introduction to Resources and Development

Dr.Sarvesh kumar
P.G Department of Geography Magadh University Bodh Gaya Bihar

ABSTRACT
It is a stylized fact in economics that natural resources are harmful for economic development. Still, one can find several examples of natural-resource based development. This apparent paradox reflects an unsatisfactory conceptualization of natural resources. This paper suggests a new evolutionary-institutional approach to studying natural resources and their role in economic development with focus on learning and linkage dynamics. The paper reviews the literature with a focus on the underlying perception of natural resources as the key for understanding its shortcomings. Most approaches perceive natural resources as finite and exogenous to the economic system. These assumptions constitute the pillars of the law of diminishing returns which inter alia states that natural resources cannot lead development. Others argue that natural resources are endogenous to the economy and can develop important dynamic linkages. The paper elaborates on the latter and suggests that in order to understand the role of natural resources in economic development, they must be understood as dynamic, and as being subject to processes of natural resource creation, extension and obsolescing that are characterised by learning and capability building.
KEYWORDS: Natural resources; Innovation; Development; Resource curse; Linkages, Structural change

I. INTRODUCTION

According to Ross (1999) the majority of countries in the World Bank's most troubled category – severely indebted low-income countries – are primary commodity exporters. A better understanding of the role of natural resources in development could have far reaching consequences for such countries. Moreover, the topic is currently extremely relevant because: (i) concerns about climate change have severely increased global demand for natural resources in the form of energy (notably biomass); (ii) high GDP growth-rates in BRIC countries and the related consumption of natural resources augment the latter demand. As a consequence the world is witnessing a 'new scramble for natural resources' (Knaup and Mittelstaedt 2009). This paper reviews the literature about natural resources and economic development, and on that basis suggests an explicit conceptualisation of natural resources within a process-oriented framework. The latter constitutes a new evolutionary-institutional approach to studying natural resources and their role in economic development with focus on learning, innovation and linkage dynamics – a learning perspective. The economic impact of learning takes the form of innovations. Not all learning processes leads to innovation, but innovation is not possible without learning activities. If one sees development as a process that involves creation of new resources, capabilities and activities, it must necessarily involve innovation – thus innovation and development are in fact inseparable concepts. The latter implies that human learning is the main source of economic development (Boulding 1978, 1981), and that to understand development it is necessary to understand the process of innovation (Nelson 2008). Learning activities are most often supported, stimulated or blocked by the given institutional set-up 1 (Johnson 1992), and are predominantly interactive (Noteboom 2000) which naturally draws attention to linkage dynamics. The Staple theory of economic development argues that at early phases of development, natural resources can stimulate emergence of several other types of activities and thus generate economic development (Gunton 2003). Here natural resources are partly seen as endogenous to the economy since under certain conditions linkages to other activities emerge – thus they are only partly cursed. Currently the literature on natural resources and development is dominated by the resource curse thesis where it is argued that natural resources are harmful for economic development (see e.g. Auty 2001; Gylfason 2001; Sachs and Warner 1995). Beneath the argument lies a perception of natural resources as being finite and exogenous to the economy. In response to the latter perspectives Brunnschweiler and Bulte (2008) argue that the resource curse is really about institutions – that it is the lack of 'good governance' which causes specialisation in natural resources. The curse is now institutional but the 'negative' perception of natural resources is unchanged. This perception of natural resources as harmful does not fit well with the fact that some countries have moved from being natural resource-based economies to being considered advanced, knowledge-based economies, and that not all natural resource-based economies are poor. On the contrary, some of the richest, and/or fastest growing, economies today are resource based. These economies include Norway, Sweden, Finland, Canada, New Zealand, Australia and the Netherlands (Smith 2007). In line with the latter points Wright and Czelusta (1997,

2002, 2004) produce a counterargument to the perception of natural resources as cursed by arguing that they have been central to development in the US, and that natural resources are contingent to investment in knowledge and infrastructure. Natural resources are here perceived as endogenous to the economy – a social construct. The latter suggest a more dynamic role of natural resources. Still, even though this literature emphasises dynamic aspects of natural resources, it is not done in a systematic and conceptual way. This paper elaborates on their insights to propose an explicit learning approach to natural resources. The paper uncovers the underlying perceptions of natural resources in the literature and links them to more general understandings of the process of economic development. The latter connection between perception of natural resources and of the process of development (and hence the role natural resources play in it) opens up for categorising each branch of research as either a static, endowment approach (focus on allocation of scarce resources) or a dynamic, process approach (focus on creation, distribution and use of new resources). Exposing these features of research produces a conceptual literature overview which in turn facilitates a critical discussion of them. The latter serves as a platform for proposing a learning approach to natural resources. This approach has consequences for both research and policy. In terms of methodology the paper mainly applies logical scrutiny and illustrative historical examples. The paper is explorative and aims at suggesting a new perspective on the role of natural resources in development. This article is structured as follows. Section 2 discusses some definitions of natural resources empirically and conceptually, and how conceptions of natural resources are linked to perceptions of structural change and development. Section (3) contains a literature review that illustrates the different implicit perceptions of natural resources in economic theory. Section (4) will scrutinize the uncovered perceptions of natural resources and link them to different traditions within economics. This exercise will highlight the shortcomings of this accumulated body of knowledge and present a learning approach to natural resources and development. Section (5) presents examples of naturalresource based development that illustrate and thus support the key points of a learning approach as presented in section (4). Section (6) will contain the conclusion including implications for policy and further research.

Natural resources

In economic theory a resource is anything that can contribute positively to economic activity – an input to the production process. It is normal to distinguish between natural resources, human resources and capital. These rather broad categories make it difficult to draw a clear line between what constitutes a resource and what does not. In this understanding of resources it is clear that a resource only exists in relation to a social context of production – for example human skill is only a resource so far it contributes to production. Also, producers need knowledge about how to identify, acquire and apply a resource in order for it to actually be a resource. It is thus partly a social construct. In more common terms natural resources are, according to the Oxford dictionary of Economics, defined as factors of production provided by nature which includes agriculture, forestry and fishing, and extractive industries producing fuels, metals and other minerals. This is also the definition of the primary sector (Black 2003). A similar definition is used in the resource curse literature2 . Though not exhaustive these empirical categories define natural resources in this paper. Zimmermann (1972) argues that a natural resource is defined by its function. Coal is a resource in as much as it serves the function of generating energy for various operations. Without this function coal would still be coal, but it would not be a resource. These remarks open the floor for a conflict between the viewpoints of natural science and social science

Natural resources, structural change and development

Naturally the perception of natural resources and their role in economic development has varied over time and across economic theories. An early influence on the link between natural resources and development was presented by Thomas Malthus (1798). According to Rosenberg (1976) Malthus's ideas come from speculating about the consequences of Great Britain's attempts to grow its own food supply as population continued to grow. From the latter Malthus proposed the law of diminishing returns. The argument has two aspects: (1) good land is scarce and when inferior lands are included in production, as production increases, the yield per unit of land will gradually diminish; (2) since land is fixed in quantitative terms by nature, it will inevitably be subject to diminishing returns to scale as all land is used. Even though Malthus did not write explicitly on natural resources his influence is hard exaggerate – it is still the dominant perception of natural resources. It is the idea that natural resources, in general, are finite – and thus exhaustible, and thus subject to diminishing returns to scale. On the other hand, in manufacturing the intensive use of capital would generate increasing returns to scale, and facilitate capital accumulation5 . The latter 'static' perception of natural resources (as nature) is part of a conceptual model of historical structural change and implicitly a theory of development. Early work on structural change identified broad patterns of change: "as the economy grows, the production shifts from the primary to the secondary to the tertiary sector" (Matsuyama 2008). The main point is that the tripartite interpretation of structural change put forward here, implicitly cements the position of natural resource-based industry at the bottom of the hierarchy with respect to economic development. This pattern of

structural change is confirmed by the findings of Kuznets (1971). Looking at nowdeveloped countries6 (1850-1950) he found that primary production went from employing more than 40% of the workforce to supplying less than 10%, and that manufacturing went from around 25% to employing about 50%7 . In order to further analyse the pattern of structural change Kuznets (1971) focuses on the manufacturing sector of the United States in the period 1880 to 1948. He 6 finds strong diversity in growth rates of different groups of manufacturing activities that he interprets to be consequences of technological change with the logic that economic growth is strongest in the industries with most innovation. From Kuznets' seminal account it seems obvious to infer that innovation is the driver of growth, and that natural resource-based industries do not innovate. This argumentation is one of the main pillars of the resource curse. This picture of history indicates that economic development implies moving out of and away from natural resources. Still, there is not a complete consensus on what lies behind these patterns of structural change and what, if any, the role of natural resource-based industries have been in the process. Cohen and Zysman (1987) argue that the dominance of the outlined model of structural change and development is problematic because even though it is only a hypothesis it helps coordinate the way economists think. It satisfies

Deteriorating terms of trade

The terms of trade is a central element in the Latin American structuralist school14 (Palma 2008b). It was noted by both Prebisch (1950) and Singer (1950) that the terms of trade of less developed countries (specialised in natural resources) was deteriorating vis-à-vis the developed countries (specialised in manufacture). They saw this as a main obstacle to economic development in Latin America. The premise for the argument is that in the primary sector prices will not increase as much as in the secondary sector because of: (i) in developed countries unions are strong. In less developed countries they are weak and the labour market is characterised as an unlimited pool of labour. The latter prevents rises in and stickiness of wages (Hadass and Williamson 2001); (ii) The 'fact' that productivity growth, positive externalities and innovation are stronger in the secondary sector (Palma 2008b), implies that primary producers' exchange relation worsens over time. Also, innovation often results in more efficient use of raw material, and thus less demand for primary products, which leads to a relatively poorer exchange situation for primary producers; (iii) Markets for primary products are characterised by 'perfect' competition because the product is assumed to be easy to imitate, and thus substitute. In the secondary sector there is 'imperfect' competition because it is assumed that products are not easy to imitate, so prices can easier increase. Here competition takes place on the basis of innovation; (iv) According to Engel's Law the share of a house hold's income allocated to food purchases decreases as income rises (Browning 2008). According to Scitovsky (1976) Engel's Law is not thought to be valid for manufacture and especially service products where innovation and novelty continuously attracts consumers, which ensures a high income elasticity. The structure of demand thus also negatively affects terms of trade. The empirical results for the 'Prebisch-Singer hypothesis' have been mixed but currently there is a consensus on that price volatility has been more significant than a downward price trend, which implies that the conclusion one can reach depends on what time period one is looking at (Findlay 2008; Baffes and Haniotis 2010). On the level of the product groups you get another picture because terms-of-trade trends vary both across time periods, and across and within primary-product groups as food, metals and textiles (Kjeldsen-Kragh 2007). Moreover, during the last 15 years it has been the terms of trade for manufacturing that has been declining (Ferranti, Perry et al. 2002). The latter can be explained by the increasing 'commodification' of manufacturing (Marin, NavasAleman and Perez 2009). The ambiguous empirical results reflect: (a) methodological problems (see footnote 14); (b) the mistaken view that the mentioned characteristics of natural resources are given by law when they are heavily influenced by contextual factors as labour market institutions and regulation of competition. Besides, even though innovation activities may be stronger in manufacturing it seem

REFERENCES

[1]. Andersen, A. D. (2011). Innovation Systems and Natural Resources – the case of sugarcane in Brazil. Ph.D. Dissertation, Department of Business Studies, Aalborg University, Denmark.
[2]. Aron, J. (2000). 'Growth and institutions: A review of the evidence.' World Bank Research Observer 15(1), pp?
[3]. Auty, R. M. (2001). 'The political economy of resource-driven growth.' European Economic Review 45 (issues), pp.
[4]. Baffes, J. and T. Haniotis (2010). 'Placing the 2006/08 Commodity Price Boom into Perspective'. Policy Research Working Paper, The World Bank.
[5]. Bakker, K. and G. Bridge (2006). 'Material worlds? Resource geographies and the 'matter of nature'.' Progress in Human Geograpy 30(1).
[6]. Black, J. (2003). Oxford dictionary of economics, Oxford University Press.

[7]. Blomström, M. and Kokko, A. (2003). 'From natural resources to high-tech production: the evolution of industrial competitiveness in Sweden and Finland'. CEPR discussion papers, no. 3804.
[8]. Boulding, K. E. (1978). Ecodynamics: A New Theory of Societal Evolution, Sage Publications.
[9]. Boulding, K. E. (1981). Evolutionary Economics. London, Sage Publications.
[10]. Bound, K. (2008). Brazil the Natural Knowledge Economy, Demos, London.
[11]. Bridge, G. (2008). 'Global production networks and the extractive sector: governing resource-based development ' Journal of Economic Geography 8 (no.), pp.
[12]. Browning, M. (2008). 'Engel's Law', in Durlauf, Steven N. and Blume, Lawrence E. (Eds.), The New Palgrave Dictionary of Economics Online, Palgrave Macmillan, 2008.
[13]. Brunnschweiler, C. N. and E. H. Bulte (2008). 'The resource curse revisited: A tale of paradoxes and red herrings.' Journal of Environmental Economics and Management 55.
[14]. Cappelen, Å. and L. Mjøset (2009). 'Can Norway be a role model for natural-resource abundant countries?', Research paper, UNU-WIDER.
[15]. Ciccone, Antonio (2008) 'Linkages', in Durlauf, Steven N. and Blume, Lawrence E. (Eds.), The New Palgrave Dictionary of Economics Online, Palgrave Macmillan, 2008.
[16]. Cohen, S. S. and Zysman, J. (1987). Manufacturing matters: the myth of the post-industrial economy. New York : Basic Books.
[17]. Daly, H. E. (1997). 'Georgescu-Roegen versus Solow/Stiglitz.' Ecological Economics 22.
[18]. Dosi, G. (1988). 'Sources, Procedures and Microeconomic Effects of Innovation.' Journal of Economic Literature 26(3).
[19]. Edquist, C. and B. Johnson (1997). Institutions and Organizations in Systems of Innovation, in Edquist, C. (Eds.), Systems of Innovation, London, Pinter.
[20]. Fagerberg, J., D. C. Mowery, et al. (2009). 'The evolution of Norway's national innovation system.' Science and Public Policy, 36.
[21]. Ferranti, D. d., G. E. Perry, et al. (2002). From Natural Resources to the Knowledge Economy. World Bank Latin American and Caribbean Studies. Washington, D.C., World Bank.