How can we rethink the factors of production for a world of common ownership and sustainability? Europe and Latin America compared

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Abstract. The classical economists bequeathed us an understanding of the nature of economies in terms of three factors of production: Land, Labour and Capital. It is the exploitation of these resources in differing combinations that has fed the world of global corporate capitalism. If we are to transcend the unsustainable and inequitable economy we live with today an intellectual reinterpretation of these three factors is a vital first step. In this paper we provide such a liberating reinterpretation with examples from European and Latin American praxis. In terms of money we explore the rejection of debt-based money systems and the popular replacements in the forms of local currency and direct peer-to-peer lending. Examples include the Banco Palmas, the Argentinian trueque, the Bristol Pound, and Zopa. We explore how labour has become subjected to increasingly precarious working conditions: in the South this has traditionally been in the form of subjection to Western capital and to resource extraction (Galliano 1971), whereas in the North it takes the form of precarious and deskilled employment How we define land and, crucially, how we assign ownership of land and think through conceptions of 'the commons' are urgent questions on our path to a sustainable future. We will explore the issue of land ownership and land reform covering examples including: the land reforms in southern Africa, the Moviemiento dos Trabalhadores Rurais Sem Terra in Brazil, the proposal for a Land Value Tax in the UK and the global peasants movement Via Campesina. We will link the theme of the empowerment of labour to the issue of land and access to resources: if the workers' movements of the 20th century were about conditions of work, those of the 21st century will be about access to resources within constrained ecosystems.

Keywords: commons, local currencies, land reform, Polanyi

1. Introduction

Although neoclassical economics presents the market system as a universal model of human effort existing in a continuous present, careful anthropological studies have demonstrated that this is far from the case. Smith's caricature of the bartering savage and his description of the essential human calling as being one of 'truck and barter' has been demonstrated to be false by a number of economists who took the trouble to study in depth human societies separated from their own capitalist economy in space and/or time, most famously the studies of Karl Polanyi (1944) and of Marshall Sahlins (1972). What these authors discovered was that the means of subsistence and the process of acquiring and then sharing the material goods that form the basis of study of the discipline of economics have varied widely and continue to do so.

This is an important realisation on the path to creating an economy based on commons, since the false assertions that aspects of the design of capitalism such as private ownership, the division of labour, and the extraction of surplus value are universal principles limits our ability to design our economies along different lines, and according to principles that might facilitate living sustainably within planetary limits, and to achieve a high degree of social equity. The purpose of this paper is not to revive the findings of anthropologists about how other societies have tackled the essential economic problem about the creation and distribution of resources, but rather to attempt a re-theorisation of this process using contemporary examples that challenge the predominant theoretical model. We do not focus on individual goods or commodities but rather on what Polanyi called the 'fictitious commodities' of land, labour and capital that, within classical and neoclassical economic theory, provide the basic resources that are used to produce the goods and services that are ultimately bought and sold in markets.

This fundamental challenge to economic theory is important in building a commons economy because, if we accept the individualist and privatised model of conceptualisation of the most basic resources within an economy, it will not be possible for us to create systems of just allocation and common ownership further down the path towards the creation of specific goods and their distribution. To create a framework within which a commons-based economy can be created we have to begin by going directly to the heart of the problem: the understanding of the basic 'factors of production' in terms of private ownership. In this article we will both challenge the conceptualisation of land, labour and capital as 'factors of production', exploring Polanyi's idea of a 'fictitious commodity' in a contemporary context, and we will provide examples from praxis that might foreshadow a rethinking of these basic productive resources in a communal perspective. Our examples are drawn from our knowledge of contemporary emancipatory practice in the social and solidarity economy in Europe and Latin America.

We take forward a process of resubjectification, where we see ourselves as actors and thinking through economic forms differently, understanding that to include all forms of economic activity under the catch all of ‘capitalism’ is to do violence to the diversity of ways in which we interact with each other to make a living, and creates a monster that we feel inadequate to confront such that many of us can more easily envisage the end of the world as a result of climate crisis than the end of capitalism. We need to create new visions of how we might live, and engage in the patent work of building and creating alternatives through our economic practices, seeing problems not as insurmountable barriers, but as issues to grapple with. We need to think more about ‘how’, and suggest that ‘not yet’ does not mean never (Gibson Graham 2006). We need to work more on developing our power to act, and focus less on what constrains us, a focus that can too easily lead to passivity and powerlessness (Holloway 2010). Our objective here is to help move towards an economy for the Anthropocene: that element in geological time where humans have changed the physical nature of the planet to such an extent that the atmosphere is heating, and vital ecosystems depleting to the extent that the viability of humanity in large numbers across large swathes of the planet’s surface is under threat (Gibson-Graham and Roelvink 2010). How can we live, work, use land and create livelihoods for ourselves in ways that do not destroy the capacity of the planet to maintain life?

How can we conceptualise the right to human development in a climate constrained world?

The paper includes three sections that deal directly with each of the classical factors of production: land, labour and capital. In each case we provide some critical discussion of the theory of the factor before providing examples of how it is being differently conceptualised in practice, and could be further reconceptualised and reworked through new emancipatory practices. Before embarking on this central part of the paper we include a purely theoretical section which addresses what is meant by a factor of production and how this definition is affected by the expansion of the economy to meet planetary limits and by the near-exhaustion of some of the basic resources upon which our contemporary economy depends.

2. Why a Resource is Not a Factor of Production

It seems immediately apparent to those who would engage in the production of goods that resources have been conveniently made available by nature to provide his/her raw materials. Initially through the discovery of the use of such minerals as copper and tin and then through a synergistic and mutually stimulating relationship between technology and geographical discovery the vast abundance of natural resources that form the earth's bounty have been exploited with increasing speed and intensity since the beginning of the Bronze Age. This process has both assumed and implanted a particular kind of relationship with the natural world: a relationship of clearly stated exploitation that troubled and continues to trouble peoples who have a closer, more respectful and often reverent attitude towards nature and her bounty.

Sale (1991) caricatures this anthropocentric view of Nature:

‘the natural world is essentially there for our benefit, our use, our comfort. The Colorado River is there to provide water for the people and farms of Southern California, needing only the technology of a Boulder Dam to complete what nature forgot to do; the Northwestern forests are there to provide lumber that the growing populations of the carelessly sprawling suburbs need to build their rightful houses; the Hudson River flows purposefully to the Atlantic so that human wastes and industrial poisons such as PCBs can be carried away, out of sight and mind, to the sea.’

It was such a perspective of the early Enlightenment that gave rise to the fundamental idea that the natural world could be divided up into a number of physical resources, rather as the carcase of a dead cow can be divided between sirloin and rump, as though neither the earth nor the animal had any right to claim an independent spiritual existence. Although we will use the terminology of factors of production throughout this paper, we will do so with the understanding that the parcelling out of nature and people into resources and work units is problematic in our attempt to build a holistic and respectful alternative economy. We also understand that elements of the natural world that are not of use to humans organised in socio-technical systems are not ‘resources’ until humans need them. Changes in socio-technical systems can mean that what is at one time a resource ceases to be at a later date: here we can cite the nineteenth century reliance on guano before the invention of nitrate fertilizers, and the relative uselessness of oil before the invention of the internal combustion engine. Thus what are resources is socially constructed (Bridge 2010).

To conclude these introductory remarks, then, we should make it clear that the concept of a 'factor of production' assumes a particular view of the natural world that we do not share. Although we use this conceptualisation as the basis for our discussion in this paper we do so from a fundamentally critical stance. Before continuing our discussion we clearly assert our own position that nature exists in and for herself and not as a store-chest open to raiding at the whim of mankind and that each human life has an intrinsic value that the conceptualisation of a person as a rational, utility-maximising, egocentric unit of labour denigrates.

3. Capital, money and ‘Capitalism’

Taking forward our non-totalising conceptualisation of discourses of ‘capitalism’, in our dissection of the three factors of production of classical economic theory we begin with the one that seems to have the least claim on being a natural resource and appears most subject to social constraint. Economists often use the word 'capital' confusingly to refer to different things, of which the idea of fixed or manufactured capital—the machinery and tools that productive enterprises need to make the goods they will ultimately sell—is the most common. Our purpose here is rather to focus on capital in the sense of the more abstract of the three factors of production, defined in Turnbull's sense of 'procreative assets' (n.d.). We will consider both the material means of production, i.e. factories and their plant, and the immaterial means of production, the finance capital that facilitates the pulling into production of the physical assets necessary to manufacturing. Since our focus is on a productive rather than speculative economy we will not be considering the 97% of all financial transactions that have no contact at all with the productive economy (Mellor, 2010); such transactions would have no place in a sustainable economy based on commons. We can reconceptualise and develop our understandings of economic, social and cultural capital in how we think about how we want to live, and in the economic practices we engage in to enact our economies: how much do we want to use scarce resources, or leave them in the ground as expending them has unacceptable ecological implications. What is the balance between technology and labour? What forms of social or cultural capital do we value and reward, within sustainable ecosystems?

The definitional confusion regarding 'capital' may well be intentional, since the obfuscation of the difference between purchasing a machine and having the power to create the money to purchase the machine helps to distract attention from the crucial power of the latter in any capitalist economy. Polanyi considered money to be ‘merely a token of purchasing power which, as a rule, is not produced at all, but comes into being through the mechanism of banking or state finance’ (1944: 76). While Polanyi is right to define money as a 'token' his 'merely' is somewhat confusing, as is his equation of 'banking' with 'state finance', and particularly for our purposes in this special issue. For it is precisely the location of the power to create finance that will enable or destroy any attempt to create an economy based on common ownership. Guevara understood this most clearly, which is why much of his most intense work following the Cuban revolution in 1956 was to construct a system of exchange using money that avoided the exploitation inherent in a capitalist money system (Yaffe, 2009). Chavez had also learned this lesson, hence his attempt to introduce mechanisms of direct exchange between the countries of the Bolivarian South, and to create the SUCRE, a currency that enabled trade within the Mercosur area without the need to have any contact with the dollar or its sphere of influence (Mathur, 2010). Chavez had acquired the dubious benefit of understanding that came through the experience of the recurrent debt crises in Latin America in the 1980s and 1990s. The realisation that vast quantities of valuable resources were leaving the countries of Latin America with only paper or debt coming in the opposite direction led to a generalised revulsion against what Eduardo Galeano colourfully called 'the open veins of Latin America' (1971). The vampiric behaviour of capitalist finance was understood and was rejected.

The understanding that it is the implicit state support for money that gives it its credibility was concealed during the years leading up to 2008. The power to create money had been privatised and made the business of shareholder-owned banking corporations. However, the fact that others accepted the paper of these corporations relied on an understanding that, were their value to be in doubt, the states where they were headquartered would be responsible for making good on the debts. The state where this lesson was learned first and most forcefully was Iceland.

From the late 1990s onwards the Icelandic economy came to be dominated by a group of young men schooled in neoliberal ideas at the University of Iceland. As part of the liberalisation of their economy they effected the privatisation of the two major state-owned banks in 1998-2002 and a parallel establishment of private-equity companies owned by a small elite of Icelandic businesspeople (Wade and Sigurgeirsdottir, 2011). In a process of leveraging based on mutual collateral, the Icelandic banking sector grew to be of international significance, with Iceland’s three main banks—Glitnir, Landsbanki and Kaupthing—becoming some of the largest in the world by 2006 (Ólafsson and Kristjánsson, 2010). In return Iceland's business elite bought up some of the world's most valuable property on the basis of highly leveraged deals (Wade, 2009). By 2007 the nominal assets of the three large banks had expanded their value to some 9 times the economic output of the whole of Iceland (Wade and Sigurgeirsdottir, 2011). As confidence amongst high-level financial traders stalled during 2006 Icelandic banks called repeatedly on their government for rhetorical support, which was bolstered by statements from UK and US 'consultant' economists (Wade, 2009). The seizing up of the global financial markets in September 2008 was the final straw for the Icelandic banks: the value of the Krona fell from 90 to the euro at the beginning of 2008 to 190 by November, while the Icelandic stock-market lost 98% of its value. Iceland's three main banks became insolvent.

Now we arrive at the moral of the story, because when it became clear that private depositors had lost money in the collapse of Iceland's banks their politicians, notably the UK's Gordon Brown, called on the country's citizens to repay the debt. Notably, it was the state and its citizens who were considered responsible for the debts, not the 'private' banks that had negotiated the deals, accepted the deposits, agreed the loans—and made the profits. This became an object lesson in the reality of capitalist finance: while the profits are privatised the risks are socialised, and more importantly, any money system is always a social system with a public guarantee of the value of money, no matter how implicit it might be. It is for this reason that Mellor

(2010) calls for the right to create money to be nationalised, as it is partially in Brazil, where a significant proportion of the economy's credit is generated by the national Banco do Brasil. This enables the money to be invested in projects of national importance rather than speculative investments that generate the maximum return to a small number of elite players.

So from a theoretical perspective we can conclude that the idea of finance capital as privately generated should be challenged and rejected. The credibility of finance has always relied on a social guarantee and is thus closely entangled with the state and its citizens. But for the purposes of this paper we are seeking solutions based on common ownership rather than state ownership, and in the area of finance such solutions abound, since emancipating money has become one of the most vibrant responses to the global financial crisis.

To facilitate theoretical discussion Blanc (2011) has divided the currently existing forms of community currencies into four types: systems based primarily on exchange and with currencies that are not convertible; systems of exchange based on time (see more in Section 5, below); exchange systems relying on reserve currencies for their credibility and convertible with them (the most well-known being the *Chiemgauer*); and schemes using tokens or vouchers to provide economic incentives to engage in socially or ecologically positive behaviour. The first two offer the most positive basis for facilitating exchange within an economy based on common ownership.

North (2008) provides a theoretical account of the role of alternative, socially generated finance in building solidarity economies and also offers a detailed account of one of the most successful systems of alternative finance: the trueque that briefly flourished in Argentina following the country's economic collapse in 2001 (see also Cato , 2007). In neighbouring Brazil, Banco Palmas offers an example of community-generated finance that is supporting community development in a rural area. The Conjunto Palemeira is a rural town of 30,000 people in north-eastern Brazil which has traditionally suffered from high unemployment and, although there was small-scale manufacturing, products were sold in nearby cities and much of the value was lost to middlemen. Communal activity in the town developed as a result of demonstrations against the poor state of infrastructure: the town had no facilities for sanitation, clean water, electricity or other public services. From the early 1980s an Association of Inhabitants at Palmeira Neighbourhood was established and in turn this group set up the Banco Palmas, which issues its own currency without being backed by the national currency. There are currently around 30,000 palmas in circulation (more than $15,000). The bank has six paid employees, who receive 20% of their salary in palmas (De Melo Neto, n.d.). Banco Palmas makes small loans to local people which only circulate within the neighbourhood. Although they are very poor, this enables local people to create small businesses to gain an income to pay the loans back. The creation of currency has enabled the strengthening of the local economy and the creation of more than 1,000 jobs. It has also made the local economy more resilient, since more production and exchangenow takes place within the community of Palmeiras itself.

In the North there are different but related problems. As in Palmeiras, in the city of Bristol in south-west England much of the value of employment is extracted through arbitrage profits and, while the city has the offices of large financial corporations, much of the wealth is extracted to head offices in London and there is still considerable poverty in the city. To tackle this problem and ensure that wealth generated in Bristol continues to circulate in the city a group of local environmentalists established the Bristol Pound in the summer of 2012 (Morris, 2012). As with the nearby Stroud Pound (Cato and Suarez, 2012), local currencies in developed economies tend to find it difficult to compete with a powerful national currency, as well as encountering cultural difficulties associated with a long history of individualist capitalist activity.

One of the most damaging consequences of the financial crisis in the West has been the failure of the circuits of investment capital for small businesses. There has been a virtual mutual response in the form of investment circles, of which the largest and most well-known is Zopa. This funding club effectively creates virtual relationships directly between lenders and borrowers in a way which excludes the banking intermediary and the value that it has historically extracted (Kupp and Anderson, 2007). This system alone has facilitated the borrowing of more than £200m since it was founded in 2005 (Moulds, 2012).

As we saw at the beginning of this section, finance is only one aspect of capital as defined within economic theory; the other aspect is fixed or manufactured capital: the plant and sites that are needed to undertake manufacturing activity. Here we have seen great advances towards a commons economy in recent years, especially on the Latin America continent.

4. Humanity and Human Labour

Labour has become subjected to increasingly precarious working conditions: in the South this has traditionally been in the form of subjection to Western capital and to resource extraction (Galeano, 1971), whereas in the North it takes the form of precarious and deskilled employment in a world where restructuring manufacture has created a workshop for the world in east Asia, with the result that in the global North the industrial working class is largely surplus to requirements. Its role is to be monitored, controlled and corralled through what David Harvey calls a process of accumulation by dispossession (Harvey, 2004). In both global North and South, but in more developed forms in the south, workers have responded to restructuring by occupying and running their enterprises themselves, and have done for over 20 years (Ness and Azzellini, 2011; Ruggeri, 2013). Across Latin America, activists have shown that another production is possible (de Sousa Santos, 2006).

There are two sides to the emancipation of labour and its replacement with a commons system of work-sharing: the first involves the liberation from wage-slavery and the recovery of agency through auto-gestion (Stirin, 2012); the second involves the liberation from oppressive and unequal wage rates and the extraction of surplus value by employers.

Auto-gestion literally means self-management: but has a bigger meaning which nods more towards self-generation or autonomous creation. It defines a system of self-organisation of employment arising from the syndicalist tradition in France; the UK has a similar tradition which is more usually labelled 'worker-managed firms' and which is part of the wider co-operative movement. Such workplaces are those who carry out the various productive tasks also share in the management of the enterprise and also take the important decisions about everyday working conditions, and about strategy and finance. What shall we produce? How hard shall we work? How much will we sell it for? How will we organise our enterprise? Horizontally, or with an elected boss or management committee? Will we make a profit, and if so, what will we do with it? What will we forgo in favour of future investment? How do we pass on the investment to future generations? How do we create and maintain that which we need to share in common: clean environments, an infrastructure, a socially cohesive society?

They can arise in a number of different ways, and how they arise can have important implications for their logecity. Sometimes, as in the case of the *empresas recuperadas* of Latin America, capitalist firms become bankrupt, giving employees the opportunity to acquire their assets. There was a wave of such buyouts in the UK during the 1970s, where some 200 enterprises were occupied by their workers (Sherry, 2010:119-128). After their liberation they still faced the same difficult market conditions that had caused the failure of the capitalist firm and in only a few cases did they manage to become successful co-operative businesses, not least through a failure to access necessary finance capital in difficult economic circumstances. A prominent example of a successful 'phoenix' style co-operative is the Tower Collier coal-mine in South Wales, which was bought by the miners with a combination of their redundancy money and a bank loan and which operated profitably for 13 years until the seam of coal was exhausted (Cato, 2004).

In other cases worker-managed firms arise as a result of the problem of succession, when the enterpreneur who started the firm wishes to require and transfer his assets in the firm into a source of retirement income. The most famous example of such a co-operative in the UK context is the Scott Bader Commonwealth. Using the co-operative principle of co-operatives trading preferentially with co-operatives, Baxi is now supplying boilers to the 10,000 homes owned by the Welsh housing mutual RCT Homes, and paying a proportion of the value of sales to the company's regeneration fund Meadow Prospect, to enable further enterprise development in a highly deprived area of South Wales, demonstrating the greater social potential of a mutual or commons-based approach to enterprise.

The third type of worker-managed firm is one that begins its life as a co-operative due to the political and social commitment of the enterpreneurs who launch the enterprise. In the UK context two prominent examples are Loch Fyne oysters and Suma Wholefoods. Suma was set up in 1975 as a wholesaling operation to service wholefood shops in the north of England: it now employs around 150 people and delivers UK-wide. It is still owned by its members, who rotate work tasks including management roles and specialist jobs such as accounting and van driving.

Although these examples of worker-managed firms are inspiring, they still operate within the oppressive structure of the capitalist market and particularly its financial system. Section 3 has already outlined the direct response of many communities to the situation of wage slavery: to create their own currencies. However, only if the commitment to solidarity against those who trade in the new currency is strong will this system avoid a gradual evolution towards inequality in holdings of the new currency, as some skills and trades are considered more valuable than others leading to differentials in hourly pay. To avoid this problem it is necessary to have a medium of exchange that is directly related to the time invested in production rather than the demand for the product. This was the theoretical insight of Robert Owen, who set up the first time-based currency for use in his National Equitable Labour Exchange, established in London in1830, first at Gray's Inn Road but soon after moved to Charlotte Street. Owen was a capitalist manager who had come to doubt the justice of a work-system that required the many to work extremely hard to generate profits for the few. He saw worker-owned firms as one solution but believed that the emancipation of the monetary system was the other crucial requirement for achieving economic justice. Rather than an arbitrary currency, whose creation and value was determined by rentiers and bankers, his view was that working people should exchange with each other by valuing their goods in terms of the labour invested in producing them. At the 'labour exchanges' the medium of exchange was the 'labour note', which related directly to time, so that people were trading in terms of the time they spent making items, equating use value and exchange value. The scheme was an instant success amongst producers, and it has been estimated that perhaps a thousand artisans were involved in the London Exchange (Cato and Bickle, 2008).

5. Land and Liberty

Although land was always the primary factor of production to the classical economists, neoclassical economists have downplayed its importance (Negru, date?). Their argument relies on the particular way that they define land: as including all the resources contained within or beneath it. These resources, they argue, can always find substitutes, so that if they become scarce their price will rise, and producers will seek an alternative input to their production process. The fact that, as Mark Twain pointed out, you should 'Buy Land—they're not making it any more' has traditionally failed to acquire any intellectual purchase amongst neoclassical economists for this reason. In the past few years, however, we have seen evidence that the relaxed approach to resources is changing, both in the corporate discourse and in the practice of corportions who are now acquiring land in a process that threatens not just potential commons-based economies but also the livelihoods of the world's remaining peasants.

The clearest evidence of the shift in discourse is found in the report from global consultants McKinsey, *Resource Revolution*. They provide a number of striking graphics indicating that, as environmentalists have been arguing for several decades, there is indeed a scarcity of some of the global economy's most important resources. They conclude that the decline in the price of commodities relative to GDP during the past century is coming to an end and identify the beginning of a new era with a multiplicity of 'resource-related shocks' and rises in commodity prices that will offset the declines in those prices as a result of increased efficiency of extraction. Most importantly from the perspective of this special issue, their prescription is that the most efficient way to use the remaining limited resources is to privatise them, since the technical and managerial methods available to the global corporations will solve the challenge of inefficiency posed by traditional economies in the areas of the world where resources are still plentiful. No mention is made of the issues of ownership of resources although it is made clear that ‘action will be necessary to ensure that sufficient capital is available and to address market failures associated with property rights, incentive issues and innovation.’ (Dobbs *et al*., 2011: 3; see also Exhibit 26 on p. 87 where property rights are identified as a key barrier to be overcome).

These arguments are exact parallels to those made in England during the period of displacement of peasants from their common land during the 17th-century. For example:

‘It is an undeniable maxim that everyone by the light of nature and reason will do that which makes for his greatest advantage. . . The advancement of private persons will be the advantage of the public’, Joseph Lee, *A Vindication of a Regulated Enclosure*, 1656; quoted in Tawney: 232

The reality of these 'enclosures' was that systems of farming that maximised profit and rent extraction eliminated the small-scale livelihoods of commoners and peasants.

The elite players, following Mckinsey’s advice, are already engaged in a rapid process of land-grabbing. Evidence about exactly how much land is being acquired and how rapidly is extremely poor (World Bank, 2010), but what is clear is that corporations, as well as governments, are rapidly acquiring land for the production of food, fuel or fibre crops for the purposes of export and to feed their people (de Schutter, 2011).

The most obvious first step towards a more common approach to land ownership is to undertake a policy of land reform. In the Western economies the reverse policy is followed, where farmers are subsidised on a grand scale, making Southern farmers 'uncompetitive'. These subsidies constitute vast amounts of public spending: from 1998 to 2004 US farmers receive an annual average of $17bn. (Kirwan, 2009), whereas the EU Common Agricultural Policy involved transfers to farmers of about €55bn. annually (European Commission, 2008). Land remains in the ownership of those who cannot use it profitably, while others who could provide for their own needs directly from that land cannot gain access to it.

Land reform is often undertaken following decolonisation or in response to an excessive concentration of land ownership. With the creation of the Czech Republic following the break-up of the Austro-Hungarian empire the vast estates of the aristocracy were divided between village communities (Cornwall, 1997), many of which still enjoy access to forest and arable land today. In many countries of the majority world land reform is an active policy with significant reallocations of land taking place in the Philippines, South Africa (Wily, 2000), Bolivia (Sikor and Muller, 2009), Brazil (Castañda, 2006), and Zimbabwe (Scoones *et al.* 2011). A detailed empirical study of the latter, based on ten years of research of the land reform in Masvingo Province, indicates that media stories of gross inefficiency following land reform are misleading since there was no evidence of widespread food insecurity nor a collapse in productivity. The debate about the efficiency or otherwise of small vs. large landholdings it taken up by Michael Lipton (2009). His research covers the land reforms during the 1950s in Japan, Taiwan and South Korea, as well as the land reform in West Bengal in 1969-84. In all cases his study indicates that the weight of evidence is that smallholders produce more per hectare than large-scale farmers. Some of the explanation for the poor economic assessment of output following land reform is that much of what is being produced is used for direct consumption, rather than being traded in a market, and hence does not feature at all in conventional economic measures (Scoones *et al*., 2011). This is an important point to note in general when commons systems are compared with market systems, and suggests the importance of new systems of economic measurement as well as conceptualisation of economic productivity and resources (Anderson, 2001).

The most renowned example of popular action to achieve land access is surely that of Brazil, where the concept of *usufruct*, drawn from Roman Law, is used to argue that land which is not being used productively should be available for use by others. Such a justification has been used by the Brazilian landless peasants movement (MST), for example, in their settlement of the land of absentee landlords (Branford and Rocha, 2002). Drawing on a history of peasant struggle for land during the 1950s and 1960s such as the Ligas Camponesas or 'peasant leagues', the movement began in October 1983, when a large group of landless peasants from across the state of Rio Grande do Sul in southern Brazil occupied a 9,200-ha. cattle ranch which was owned by an absentee landlord. Over the following eight years the movement staged 36 more occupations alongside protest rallies, marches and hunger strikes. They were supported by local radical priests and eventually succeeded in settling 1,250 families on their own land.

The MST is now the largest social movement in Latin America, with an estimated membership of 1.5 million people and a presence in 23 of Brazil's 27 states. This campaign took place in one of the most unequal societies in the world, an inequality exacerbated by the pattern of land use in which 1.6% of the population who are landowners control nearly half of the nation's farmland and 3% of the population owns two-thirds of the arable land. The MST organize the occupation of unused land which is then farmed co-operatively, with the construction of houses, schools and clinics. The campaign has been very successful, leading to the redistribution of nearly 30 million hectares of land; today some 45 per cent of Brazil's agrarian settlements are connected to the MST. The MST has achieved title to land for more than 350,000 families and another 180,000 are waiting for the title to the land they have occupied.

5. Conclusion: Sustainability Requires a Commons-based Economy

In tune with the theme of this special issue we are convinced that to achieve a just and sustainable future economy we need to take seriously the issue of the ownership of resources and to consider patterns of ownership that most closely resemble the common ownership system that has typified most of human history prior to the revolutionary advance of capitalism in the 18th-century. In this paper we have offered a theoretical reconceptualisation of the theoretical notions of 'factors of production' to explore how we might rethink the resources that are used in production to support the evolution of an economy based on commonwealth rather than profits for an elite. We have offered contemporary examples from Europe and Latin America that most closely approximate to this ideal.

In concluding we would stress the fundamental theoretical link between social justice and environmental sustainability in the economic sphere. The reasons for this link have been rehearsed at length (see Mellor, 2012; Cato, 2012*a*), but we would like to reiterate them here to challenge the idea prevalent in the countries of Latin America that the North's focus on the need for sustainability may be another move in the game of post-colonial exploitation. Although we can understand how this idea has arisen as a result of the corporate co-option of the sustainability agenda, and particularly that of the Rio +20 conference, we would suggest that the pressure on resources and the need to address the issue of a fair and equitable standard of living is the most effective contemporary force exerting pressure on the capitalist model of economic life. We concur entirely with Hazel Henderson's suggestion that:

'An economy based on renewable resources carefully managed for sustained yield and long-term productivity of all its resources can provide useful, satisfying work and richly rewarding life-styles for all its participants. However, it simply cannot provide support for enormous pyramided capital structures and huge overheads, large pay differentials, windfall returns on investments, and capital gains to investors.'

The environmental crisis is the focus of today's radical struggle for emancipation and for control of resources and production. If the workers' movements of the 20th century were about conditions of work, those of the 21st century will be about access to resources. The priority for those of us who would favour an approach to economic life based around commons is to use base our arguments for justice around claims on the control of and access to resources rather than claims for employment or cash transfers.

Websites: solidarityeconomies.org; greeneconomist.org

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