

REVERSING AUSTRALIA'S RESOURCE CURSE? NO SUCH LUCK...

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If the point of reversing the resource curse is to ameliorate pernicious social, political-economic and ecological consequences of extractivism, the concept itself poses an obstacle to progress. This is because a resource curse reversed is a resource blessing. Resource curses and blessings both presuppose extractivism. While extractivism is an evolving term with contested meaning, here it refers simply to extractive activities carried out under conditions of capitalist production – *i.e.*, mining for profit to reinvest in expanding production rather than for meeting the needs of society. Extractivism is therefore not synonymous with mining and opposing the former does not mean doing away with the latter altogether. Indeed, the future of mining depends on transcending extractive industry that is driven and coordinated by the imperatives of capital accumulation. The character of alternative forms of extractive activities oriented toward satisfying social needs is yet to be formulated by the social movement required to bring it into existence.

The Systems of Provision (SoP) approach to consumption theory used in conjunction with a spatio-temporally specific theory of capitalist landed property (CLP), rather than a theory of landed property *in* capitalism (LPiC), is proposed as a way out of the conceptual and political quagmire of the extractivism: resource-curse/resource-blessing (E_{RC/RB}) nexus. A SoP-CLP framework is better placed to confront the quandary of so-called natural resource endowments in Australia today because, unlike the resource-curse approach, the relationship between political-economic outcomes and resource abundance is conceived as an integral unity of mutually constitutive social processes. What the resource-curse approach

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considers a paradox of wealth begetting poverty, the SoP-CLP framework renders legible as the imperatives of capital accumulation generating spatio-temporally specific and contingent outcomes.

At stake in debates about the resource curse/blessing are how the gains from extractivism are managed. Resource curses and blessings are derivative forms of extractivism. Reversing a resource curse is to do nothing more than to bring about a more equitable distribution of incomes from extractive industry thereby crafting a resource blessing under a modified form of extractivism. This may have been tenable in the 20th century, but the state of the climate crisis today means extractivism itself must evolve. Such a task requires moving beyond calls to reverse the resource curse and toward a radical reappraisal of extractivism in Australia. Why?

The 2022 Intergovernmental Panel on Climate Change (IPCC) report issues the following warning in concluding remarks for the chapter on Australasia:

Some of the risks for natural systems are close to critical thresholds and adaptation may be unable to prevent ecosystem collapse. Other risks will be severe, but we can reduce their impact by acting now, for example coastal flooding from sea-level rise, heat-related mortality and managing water stresses. Many of the risks have potential to cascade across social and economic sectors with widespread societal impacts. In such cases, really significant system-wide changes will be needed to the way we live and govern currently. To facilitate such change, new governance frameworks, nationally consistent and accessible information, collaborative engagement and partnerships with all sectors, communities and Indigenous Peoples and the resources to address the risks, are needed. However, our ability to adapt to climate change impacts also rests on every region in the world playing its part in reducing greenhouse gas emissions. If mitigation is ineffective, global warming will be rapid, adaptation costs will increase, with worsening losses and damages (IPCC 2022: 100-1).

The report is definitive in its injunction that, should mitigation fail, adaptation will become increasingly difficult and the costs of global warming, in the broadest terms, will become worse, quickly. Meanwhile, Labor's Anthony Albanese maintains in April 2022 that 'if coal mines stack up environmentally, and then commercially, which is the decision for the companies, then they get approved' (Chung and Foley 2022). The Liberal/National coalition position is, as Scott Morrison says in March, that 'When it comes to our fossil fuel industry, and particularly coal, it will

be around for decades to come' (Murray 2022). Greens leader Adam Bandt announces in May that while there can be debates in the next parliament about how quickly to get out of coal and gas, everyone should be able to agree not to open new mines because 'you can't put the fire out while you're pouring petrol on it' (Secombe 2022). Bandt makes putting the fire out in policy terms, as one commentator puts it, 'sound simple [...] tax the billionaires, the big corporations and the dirty industries to fund ambitious social and environmental goals' (Secombe 2022). The proposed form of this tax for mining companies is, Bandt confirms, 'to be assessed on a project-by-project basis, based on the original Henry Review's mining super-profits tax' (Secombe 2022).

While the Greens go furthest in their plans for extractive industry, even they rely on redistributive measures to disincentivise some forms of extractivism while leaving the structure of the industry intact. The absolute horizon of possibility, according to these views, are expansionist extractivism or a winding down of some mining activities alongside a redistribution of revenues from extractive industry.

The central claim elaborated below is that the resource-curse approach is itself a barrier to transcending extractivism. This is because the resource-curse approach, no matter how critical, is oriented toward the question of how to manage the gains from extractive industry. Mining carried out under conditions of capitalist production – *i.e.*, extractivism – is therefore presupposed in either resource curse or blessing. The point of difference is the form extractivism takes, not whether it can or should continue. An alternative framework of analysis is required to tackle the question of extractivism in the context of a climate crisis that demands immediate changes to the status quo. As such, the SoP-CLP approach is elaborated to evaluate aspects of proposed food and energy transitions in Australia.

The argument proceeds first with a critical outline of the resource-curse approach, drawing out links to debates on strategies for managing international trade alongside pathways for economic development. Attention is then focussed on the Australian context, considering counterposed claims for a resource curse and blessing. The merits and limitations of the $E_{RB/RC}$ framework are then discussed briefly before a SoP-CLP analysis of food and energy in Australia is sketched as a point of departure for further studies on how exactly to transcend extractivism.

What is a resource curse?

The resource-curse approach emerged as an explanation for the failure of poor countries with abundant natural resources to prosper in the latter part of the 20th century. It seems intuitive that countries with access to the so-called free gifts of nature might well have an advantage over their resource-poor counterparts, particularly when it comes to generating national wealth and all it entails. Most studies that inform the resource-curse approach, however, report a negative association between extractive industry on the one hand and various indicators of economic development on the other (Davis and Tilton 2005: 233). According to these studies, it is evident that since the 1970s economies dependent upon extractive industry exhibit lower growth rates and display higher levels of poverty and corruption after controlling for GDP per capita (Stevens 2003: 5).

Personal opinions from low-income countries lamenting an abundance of natural resources are often cited in this literature to bear out these linkages. Venezuelan diplomat and founder of the Organisation of Petroleum Exporting Countries (OPEC), Juan Pablo Pérez Alfonso, is notorious for referring to petroleum as the ‘devil’s excrement’ in 1975, bemoaning that ‘it brings trouble [...] look at this *locura* – waste, corruption, consumption, our public services falling apart. And debt, debt we shall have for years’ (Dell 2004: 39). The Saudi Arabian oil minister during the 1970s OPEC oil shocks, Sheik Ahmed Yamani, is likewise noted for grumbling that ‘all in all, I wish we had discovered water’ (Ross 1999: 297). Kenneth Kaunda, the first President of Zambia from 1964, is similarly renowned for his moderated *mea culpa* that ‘we are in part to blame, but this is the curse of being born with a copper spoon in our mouths’ (Boos and Holm-Müller 2016: 882). Such testimonies from those with experience of the apparent paradox of resource-wealth begetting poverty are taken by proponents of the resource-curse approach to validate the observed relationship between declining welfare and resource abundance.

The resource-cure approach contradicts political arguments for freer trade underpinned by the economics of comparative advantage. Structural mechanisms that give rise to the resource curse are associated with the deterioration of terms of trade owing to the long-run decline of primary commodity prices relative to the price of manufactured goods (Prebisch 1950: 1-12; Singer 1950: 473-85).

The appreciation of the exchange rate because of mineral booms is also noted as a primary vehicle for creating a resource-curse situation (Gregory 1974: 71-91). Such outcomes were documented by OPEC countries from the 1970s amongst other so-called peripheral economies in South America from the same period. A 'New World Economic Order', heralded in 1974 by the United Nations, was portrayed as an emerging shift in the balance of economic power globally, suggesting that the global south, due to its ownership of natural resources, would supersede the global north. Clearly, this did not transpire. Four main economic causes of the resource curse are put forward as explanations: declining terms of trade for primary commodities; volatile international commodity markets; poor linkages between resource and non-resource sectors; and sectoral imbalances giving rise to what becomes known as 'Dutch Disease' (Ross 1999: 298).

Successive governments in Australia deployed import-substitution-industrialisation strategies within the context of a broader Keynesian framework of demand management as the basis for its post-war boom (Connell 2004; Jones 1989: 42-7). Volatility in international commodity markets from the 1950s is well documented, with studies like Joan Robinson's, of imperfect competition and monopoly, remaining apposite (Robinson 1979). Bob Gregory built upon the work of Ronald Wilson to demonstrate the connection between resource and non-resource sectors mediated by the exchange rate in the Australian economy (Gregory 1974: 71-91; Wilson 1931). Gregory and Wilson figure conspicuously in a larger Australian contribution to international trade theory based loosely around the 'dependent economy' model, renamed the 'Salter-Swan-Corden-Dornbusch' model in 1995 (Corbo and Fisher 1995: 2863).

Richard Auty's various studies of the 'Dutch Disease' phenomenon also provide exhaustive elaborations of the structural mechanisms linking sectoral imbalances and currency appreciation (Auty 1993). Taken together, this ensemble of insights and concepts provides a formidable counternarrative that positions the resource-curse approach in opposition to those who would argue for 21st century extractivism and the resource-blessing.

The rich and contested scholarship through which the resource-curse approach has emerged deserves more consideration than this potted history of thought in practice offers. Interlocutors surveyed above are reference points for further critique. Key points to note for the question at hand are as follows. First, the resource-curse approach provides a critical alternative

to mainstream trade and development theory. Second, debates surrounding the notion of a resource curse, particularly in relation to questions of economic development, are bound up in longstanding and ongoing decolonial struggles for self-determination. On this point, it is instructive to consider whether any President of the USA has ever had cause to lament the abundance of oil, arable land, or minerals under their control? Note Donald Trump's Earth Day address in 2017 where he opines 'our nation is blessed with abundant natural resources [...] Americans are rightly grateful for these God-given gifts' (Levine 2017). Third, and most importantly, the principal concern of the resource-curse scholarship is how to manage the gains from extractive industry, rather than whether to engage in it at all, which would thereby reveal the tantalising prospect of a future beyond extractivism.

Does Australia have a resource curse?

Australia is undeniably endowed with abundant so-called natural resources. So called because the extent to which natural resources can be considered 'natural,' or untouched by human labour, has been shown to be problematic at best and deliberately misleading at worst. Bill Gamage's *The Biggest Estate on Earth* (2011) and Bruce Pascoe's *Dark Emu* (2018) have sparked controversy with their claims that what Europeans first confronted on the continent now known as Australia was in fact a carefully curated ecology to which the oldest culture on earth, that of Aboriginal and Torres Strait Islanders, have been custodians for millennia. Binary framings of humanity as against or separate from nature have been critically reappraised in debates spanning the social and physical sciences for decades. New insights generated by emerging fields of political ecology, socialist ecology and ecological Marxism have reinvigorated old lines of inquiry stemming from interlocutors like Frederick Engels' *Dialectics of Nature* (1940 [c. 1878]) through to Richard Levins and Richard Lewontin's *The Dialectical Biologist* (1985). Not yet equipped with the tools to conceptualise these innovations, mainstream economics continues to treat natural resources simply as raw materials dug, pumped or cut from the earth. In more technical terms, the Australian Bureau of Statistics methodology for the national accounts defines natural resources as 'Non-produced non-financial assets consisting of land, mineral and energy resources, native standing timber and radio spectra' (ABS 2021).

While the extent to which these resources are in fact natural is debatable, the term is used consistently in mainstream economics literature and in the systems of accounting for economic data, so the ABS definition is adopted for what follows. Consider Australia's top 3 export items in 2019/20 as examples: iron ore and concentrates with 21.6% of total export revenues, coal accounting for 11.5% and natural gas at 10%. In fact, 13 of the top 25 export items in terms of revenues for 2019/20 are non-produced goods, or natural resources. This amounts to just over 60% of all export revenues in 2019/20 coming from minerals, fuels, agriculture, forestry and fisheries exports, lumped under the banner of natural resources (DFAT 2021: 20-1, 37). It is clear then that not only does Australia have access to an abundance of non-produced resources, but it takes advantage of this abundance through export-oriented primary industry. This export profile makes Australia a prime candidate for both the resource blessing and curse. But how does the other side of the equation – *i.e.*, the social, political-economic and ecological outcomes – stack up?

Economic growth and development are two parameters typically used to assert the resource-curse and resource-blessing arguments. The Australian economy has a remarkable recent record of economic growth lasting some 28 years before a recession in 2020. This record run of sustained growth included the aftermath of the 2008 global financial crisis where many claimed that Australia's resource exports, iron ore in particular, were responsible for cushioning the domestic economy from external shocks radiating from the collapse of the US housing market. Australia ranked 8th out of 189 countries on the Human Development Index ranking in 2020 where factors such as life expectancy (83.4), expected years of schooling (22), mean years of schooling (12.7), and Gross National Income per capita measured in Purchasing Power Parity (\$48,085) are considered (UNDP 2020: 361). It appears then that based on sustained GDP growth and economic development, as understood by the United Nations Development Programme, Australia does rather well.

These observations alone are not sufficient, however, to tip the balance one way or the other for a resource curse or blessing. The key is the extent to which, and how exactly, Australia's resource abundance is connected to economic growth and development. Proponents of both the resource-blessing and resource-curse approach for Australia are instructive in this regard.

Australia's resource blessing?

Australia has long been considered a 'lucky country', particularly by those who subscribe to the resource-blessing view. The phrase was intended as one of reproach by historian Donald Horne whose 1964 book by the same title still prompts commentary today. Horne, according to a recent *Canberra Times* editorial, was critical of 'a lack of enterprise and argued that rather than going down the path of innovation and excellence Australians waxed prosperous on the back of abundant resources, a democratic form of government inherited from the colonising power, and a continuing influx of migrants' (Moloney 2021). A 2020 opinion piece in the *Sydney Morning Herald* riffing off Horne's now infamous expression, this time from an economist, claims the source of 'luck is well known and transformative for our economy – an abundance of natural resources' (Joiner 2020).

This familiar trope features in a 2011 speech by Gary Banks, the then Chair of the Productivity Commission (PC), to its 'Economic and Social Outlook' conference in a panel on 'Managing the growth shock'. Banks, who was Chair of the PC until 2012, before taking up a role as an independent non-executive director of Macquarie Group in 2013-2020, is a Senior Fellow at the Centre for Independent Studies. Persevering in his decades long proselytising of supply-side economics, Banks warned in 2021 that the Morrison/Frydenberg 'sugar hit' budget failed to invest in serious economic reform to boost productivity, meaning every Australian would miss out on a potential \$10,000 a year pay rise, or the equivalent of another mining boom (Kehoe 2021). A decade prior, addressing PC colleagues about the mining boom, Banks outlined an exemplary version of the resource-blessing perspective. In *Australia's mining boom: what's the problem?* Banks claims that labels such as de-industrialisation, the 'Dutch Disease,' and the 'two-speed economy' suggest a policy problem 'requiring government intervention to reverse or dampen the structural adjustments required by the resource boom' (Banks 2011: 2). But, says Banks, we should not lose sight of the fact that these 'economy-wide impacts unambiguously raise our national wealth' and that the 'main effect on other sectors appears to have been to nudge them further in the direction they were already going,' with longer term effects such as the 'relative rise of the services sector and decline of manufacturing and agriculture' being merely the 'manifestation of advanced economic development, observable in all OECD countries' (Banks 2011: 2-6). The real problem confronting

policy makers with respect to the mining boom, Banks claims, are not the associated structural adjustments, that should be 'welcomed as the mechanism by which we are capitalising on our external good fortune,' but rather how to continue with a program of reforms to ensure the adjustments happen smoothly (Banks 2011: 14). Horne's bugbear makes an appearance once again with Banks wryly rebuffing those who claim high levels of foreign ownership in mining vitiate the gains from extractivism by noting Porter's 1984 statement that 'although virtually ignored in much of the discussion, consumption of all goods would increase, as would national expenditure and aggregate welfare; indeed, terms such as 'Dutch Disease' seem to imply that it is a morbid condition rather than a sign of a lucky country' (Banks 2011: 2 citing Porter 1984: 16).

How much longer can this 'luck' last? In the foreword to the 2019 *National Resources Statement*, the then Minister for Resources and Northern Australia, Matt Canavan, claimed 'Australia's resources sector – encompassing mining, oil and gas development, mining services and the people and communities around them – has never been more important to our economic wealth and prosperity than it is today' (Canavan 2019: 3). The report cites the doubling of employment, production and tax revenues during the preceding decade, claiming that the sector continues to underpin Australia's wealth and prosperity. For such an arrangement to continue, Canavan argues, supportive policy is required to aid and maintain growth of the resources sector. The five-pronged goals of the statement revolve around:

- 1) delivering the most globally attractive investment destination for resources projects
- 2) developing new resources, industries and markets
- 3) investing in new technologies and approaches, particularly around delivering better environmental outcomes
- 4) creating well paid and secure jobs
- 5) supporting communities to ensure they receive benefits from the development of Australian resources (Canavan 2019: 3).

The report ends by stating that future success will be measured against whether policy reforms are able to increase exploration investment and success for Tier one resources, develop new resources regions and industries to market, develop long-term research and development

capability in the sector and to promote the reputation of the industry as socially responsible (Canavan 2019: 52). A Tier one resource is referred to by industry consultants as a ‘company making mine’. Such mines are large, have a long life-expectancy and run at low cost – think Broken Hill or Olympic Dam. A Tier one project would be expected to generate \$300-600 million in revenue calculated using long run commodity prices for longer than 20 years and costing about a quarter of the running expenses of the costliest mines. Furthermore, the project would be expected to go ahead irrespective of where in the business cycle or commodity cycle we currently sit (Minex 2021). The vision for Australia’s resource sector articulated by the Federal government appears to be one of optimistic expansion. This sanguine outlook undergirds the resource-blessing perspective in general. Proponents of the resource-curse approach offer cautious pessimism in response.

Australia’s resource curse?

Critical perspectives on the sustainability of the resources sector and the ways its windfalls are managed have been advanced by several scholars in the last decade. Surveying a few choice examples indicates key themes inform dominant lines of critique.

Paul Cleary’s two-part intervention in *Too Much Luck* and *Mine Field* appeared within twelve months from 2011. The books are complementary. Their message is sharp and can be glimpsed in two quotes. Cleary declares, in *Too Much Luck*, that ‘unless we manage this extraordinary boom more effectively, our good fortune will *curse* future generations’ (Cleary 2011: xi). The best way to dodge the resource curse in Australia, says Cleary, is through a sovereign wealth fund (SWF) to stabilise otherwise volatile cycles in commodity prices and demand conditions for minerals. Whereas in *Mine Field*, Cleary focuses on the social costs of mining, seeking ‘solutions to better manage the once-only development of our resources for the benefit of all parts of society and our economy, and for the benefit of future generations of Australians’ (Cleary 2012: xii). The problem, Cleary alleges, is regulatory capture and the solution is a ‘well-resourced federal “super regulator” to be run jointly with the states’ (Cleary 2012: xi). Cleary’s case across both books is compelling in its charge that Australia suffers the resource curse, with all its concomitant social

problems, and that a suite of legislative reforms is required to counteract the adverse effects of resource-driven economic development.

Guy Pearse coins the term 'quarry vision' to describe the lunacy of expanding an export-oriented coal industry amidst the climate crisis (Pearse 2009: 94-5). Quarry vision, Pearse asserts, 'blinds us to history and its biggest lesson: nations squander the proceeds of booms with monotonous regularity' (Pearse 2009: 16). Pearse maintains Australian governments might well acknowledge that 'an abundance of resources has come to be seen by many economists as a guarantee of macro-economic volatility, even as a curse rather than a blessing' (Pearse 2009: 16).

James Goodman and David Worth go furthest in questioning the celebratory optimism around the recent mining boom. Their 2008 study is a sobering examination of three curses driven by the mining boom aligned with three contradictions inherent to the capitalist mode of production: the capital-labour contradiction; the capital-capital contradiction; and the capital-nature contradiction (Goodman and Worth 2008: 201-2).

While this last line of inquiry is useful for identifying social problems linked to resource-driven economic development, it is limited to questions of how best to manage extractivism rather than doing away with it altogether. To put it another way, the resource-curse approach helps illustrate what is going on without offering much by way of explaining why, thereby framing extractivism as a moral conundrum rather than one way among many that the state apparatus in capitalism facilitates the imperatives of capital accumulation. The social dynamics that drive resource-dependent economic development and the social structures that compel or obstruct policy reform are confounded when the issues are framed according to a resource-curse/resource-blessing binary. The recommendations obtained from these studies need to be strengthened by critically engaging the mainstream conceptions of rent, economic development, production and consumption at the very root of the problem. Extant scholarship explains in a limited way *what* is wrong and speculates about *how* to remedy the situation. More work is needed on *why* these problems exist at all if we are to build a future where they do not.

Over a decade has elapsed since these critical voices were raised in response to the end of the construction phase of the mid-2000s minerals boom. Even as links between extractivism and climate crisis are solidified, much of the state apparatus in Australia seems intent on continuing to promote the intensive exploitation of its 'natural resources'. So long as this

seemingly entrenched enthusiasm for the expansion of extractive industry in Australia continues, the lines of inquiry set down by Pearse, Cleary, Goodman, Worth and others need to be taken further. Extractivism not only remains on the agenda for both State and Federal governments in Australia, it informs the economic plan for recovery from the pandemic recession. The proposed ‘gas-led recovery’ from the COVID recession, for example, indicates a commitment to expanding extractive industry to stimulate economic growth. A leaked report from May 2020 by a manufacturing taskforce advising the now decommissioned National Covid-19 Coordination Commission (NCCC) recommends the Federal government ‘create the market’ for gas and build fossil fuel infrastructure intended to operate for decades to come (Morton 2020). Prime Minister Scott Morrison went on to state on the 15th of September 2020, that ‘to help fire our economic recovery, the next plank in our JobMaker plan is to deliver more Australian gas where it is needed at an internationally competitive price’, indicating the advice was well received (Morrison 2020). The ALPs promise of 43% emissions cut by 2030, adopting recommendations from the Business Council of Australia on safeguards for existing facilities (DeLorenzo 2021), indicates that neither Labor or the Coalition intends to take the advice of the Greens that the fire cannot be put out while pouring petrol, or liquified natural gas, on it (Slezak 2022).

Alternatives to the resource curse/blessing approach

The discussion up to now has considered the merits and limitations of the $E_{RB/RC}$ nexus. There is no denying that debates over how to manage the gains from extractive industry in Australia are important. The resource-curse approach is uniquely placed to consider the complexities of the social, political economic and ecological consequences of managing non-renewable resource extraction. This strength, however, is precisely why the resource-curse framework is inadequate for the task of transcending extractivism amid the climate crisis. It is no longer tenable, if ever it was, to merely manage extractivism, even if its gains can be distributed more equitably and care is taken to acquire permission from stakeholders. Australia was awarded the ‘accolade’ at COP26 for being the world’s largest emitter per capita of greenhouse gases from coal-fired electricity generation, almost doubling China’s per capita level (Morton 2021). While the resource-curse approach, particularly those of the Goodman and Worth

variety, spotlights the social and ecological consequences of extractivism that the resource-blessing crew omit or massage with their economic focus, both are primarily concerned with managing the consequences of extractive industry rather than addressing the imperatives driving it.

Transcending extractivism requires a framework of analysis capable of tackling this limitation. A suitable candidate is the Systems of Provision (SoP) approach to political economy. The SoP approach was developed in the 1990s to address perceived limitations of consumption studies across the social sciences. Three decades of debate and application has generated considerable scholarship on the subject which is neatly sketched in the 2021 *A Guide to the Systems of Provision Approach* by Kate Bayliss and Ben Fine. Those seeking comprehensive treatment are encouraged to consult the Bayliss and Fine work as only very basic elements of the SoP framework are elaborated here for the purposes of sketching contours of future study. The SoP approach allows consumption and production to be conceived in their integral unity through the movement of commodities in time and space. The key reason the SoP framework can go beyond the resource-curse/resource-blessing approach in challenging extractivism is because consumption, as conceived in the SoP framework, stands above extractivism – *i.e.*, extractive activities conducted under capitalist conditions – in abstract terms. People will go on consuming in a world without extractivism. The same cannot be said with any certainty of a world where extractivism continues, even if it is under the guise of a resource blessing. Or, to put it in more technical terms, the notion of an 'economy' is given in the static sectoral analysis of the resource-curse/resource-blessing approach. The imperatives shaping forms of extractivism are conceived as immutable structural processes through which this 'economy' exists. Extractivism is the pivot under which oscillates the pendulum of resource management swinging from blessing to curse. The SoP approach, in contrast, generates its notion of a socially embedded economy through a dynamic integration of production and consumption viewed from the perspective of a commodity in motion. Extractivism is therefore a point of departure for an evolving analytical frame where outcomes are contingent. The locus of potential outcomes revolves around the commodity group itself instead of stylised notions of an 'economy' riven with assumed imperatives shaping forms of industry. A SoP analysis of energy, for example, must obviously begin from extractivism, but it does not necessarily end there, as it must with the resource-curse/resource-blessing approach.

A SoP takes the perspective of a commodity tethered to a specific time and place. Consumption of specific commodities are conceived as components of integrated vertical systems of production, distribution, exchange and disposal, as well as to horizontal socio-economic variables like gender, income and ethnicity (Bayliss and Fine 2021: 2). The picture of integrated vertical systems and horizontal socio-economic variables is then built by elaborating the specifics in time and place of the following categories: agents/agencies, structures, processes, relations, material cultures. The rationale for investigating SoPs through these five categories is ‘to ensure that both sufficiently holistic a view can be taken and that this can allow for specific SoPs to be addressed and set in context’ (Bayliss and Fine 2021: 41). Importantly, for the purposes of an alternative to the resource-curse approach, a ‘SoP, then, might initially appear to be reducible to a simple matter of more or less structured supply and demand within a particular sector but, as soon as we begin to investigate what is provided, how and to whom, and with what meanings to its participants, it becomes a matter of unravelling a whole series of complex but interconnected issues’ (Bayliss and Fine 2021: 41). Table 1 spotlights some of these issues as they relate to SoPs for food and energy in Australia today.

Table 1: Systems of Provision (SoP) – Food and Energy

	Description	Food	Energy
Agents/Agencies	Who? Participants in the provisioning system. Consumers, producers and all in between.	Farming businesses, state and federal governments, landholders, indigenous landowners, retail and agricultural workers, advertising firms, retail firms, logistics firms and workers.	Mining firms, climate activists, state and federal governments, indigenous landowners, landholders, mineral exploration firms, minerals Council of Australia, BCA, CFMMEU.

<p>Structures</p>	<p>What? Historically and socially specific forms of provisioning that are evolving. Agents operate within these structures that include organisational, institutional, social, formal and informal forms.</p>	<p>Global agribusiness, Australian resources sector, export-oriented agricultural sector, state regulation, federal regulation, WTO (Trims, Trips and GATT).</p>	<p>Global minerals industry, export-oriented energy sector, IGOs, NGOs.</p>
<p>Processes</p>	<p>How? The structured sequence of activities carried out by agents operating within evolving structures. Processes can be understood in both systemic and abstract terms – <i>e.g.</i>, globalisation, privatisation – as well as specific activities – <i>e.g.</i>, labour process, advertising.</p>	<p>Globalisation, seasonal labour processes, financialisation of land, public health campaigns.</p>	<p>Globalisation, neoliberalism, financialisation, climate change.</p>

Relations	SoPs are constituted by and, in turn, constitute and reproduce relations of class, gender, race etc., contingent upon who exercises power, how, with what purpose, open to contestation and conflict.	Race, gender and class, land rights struggles for ATSI people, state and federal governments, competition between firms in agriculture, determination of wages and conditions for farm workers.	Race, gender and class, land rights struggles for ATSI people, state and federal governments, competition between firms in mining, determination of wages and conditions for mining workers, renewable energy access for low-income countries.
Material cultures	Integral relation between SoPs and cultures attached to it which give different meanings to provisioning for those involved.	Nationalism bound up in buy Australian campaigns, food security concerns, regional culinary cultures, public health education amid increasing obesity/overweight trends.	Apparent distinctions between regions and cities, generational opinions on extractivism amid climate crisis.

One issue vital to the analysis of extractivism in Australia is the historical evolution of landed property. The question of who owns and controls land in Australia has a direct bearing on any investigation of extractivism but is largely underdeveloped in extant scholarship on the subject. For this reason, the critique of extractivism in Australia requires the SoP approach be developed in conjunction with a spatio-temporally specific notion of capitalist landed property.

The term capitalist landed property (CLP) is used to distinguish it from the notion of landed property in capitalism (LPiC). The debates around the treatment of landed property in the history of economic thought, particularly on questions of rent, are canvassed in more detail elsewhere

(Collins 2017; Collins 2022) but the key difference for the current study relates to how the LPiC approach is concerned with the fact that land is owned in capitalism whereas the notion of CLP goes further by considering the implications of *how exactly* land is owned. The distinction matters because the logical conclusion of the LPiC approach is to change who owns the land or to redistribute gains from extractive industry to compensate owners. LPiC, in effect, parachutes an abstract notion of land ownership into capitalism, without accounting for the specificities of the historical evolution of landed property in any given context. Asking how land is owned through the concept of CLP, however, in specific places and times brings to the fore questions of social power among stakeholders and allows for seemingly paradoxical outcomes to be explained. For example, situating the resource-curse and resource-blessing arguments for Australia in the context of a tax and transfer system where mining firms are simultaneously paying royalties to the states while in receipt of government subsidies to minimise production costs shows that the resource curse and blessing give rise to one another rather than cancelling each other out. The 1974 Fitzgerald report on *The Contribution of the Minerals Industry to Australian Welfare* and the 2009 final report of the Henry review on *Australia's Future Tax System* show this in forensic detail across two mining booms.

The critique of extractivism in Australia therefore requires a SoP analysis that includes a specific theory of CLP rather than of LPiC. Such an undertaking requires further elaboration, but the brief discussion here sketches fundamentals of how the SoP-CLP framework offers an alternative to the $E_{RB/RC}$ nexus. The discussion now turns to two actually-existing systems transitions in Australia: food and energy.

Energy transition?

The *Queensland Climate Transition Strategy* states that transition ‘refers to shifts in the Queensland economy in response to the way the global economy is changing, and will continue to change, in response to an increasingly carbon constrained environment’ (Miles 2020: 5). A green hydrogen industry based in and around Gladstone is identified as one opportunity for energy transition. Regenerative agriculture throughout the Fitzroy Basin purports to lay the foundations for large-scale sustainable agriculture and the beginnings of transition in food provision.

Trade and Investment Queensland (TIQ) compiled its *Queensland Hydrogen Prospectus* in March 2020, page 5 of which is headed 'Queensland's competitive advantage'. An export-oriented hydrogen industry, according to this document, could be created and expanded by the Queensland government offering the following:

1. Stable government
2. Australia's lowest payroll tax rate
3. Competitive labour costs
4. Low cost of living
5. Sophisticated transport and communication infrastructure
6. Highly skilled labour
7. Streamlined development approvals and project facilitation processes
8. A strong private investment sector

Queensland, the report goes on to say, 'has the potential to produce and export renewable hydrogen using our natural resources, creating a new wave of high-value, innovation-focused jobs in the process (TIQ 2020).

Green hydrogen is made using renewable energy sources, whereas blue hydrogen is created using gas and brown hydrogen uses coal. Green hydrogen is produced through a process of electrolysis, whereby water is split into its component parts, oxygen and hydrogen, using significant amounts of electricity. After this initial process, hydrogen can be stored and transported to be used as a clean renewable energy source. The problem is how to generate the electricity required to produce hydrogen at scale. The Morrison Coalition government indicated a firm commitment to promoting blue and brown hydrogen. The Hydrogen Energy Supply Chain (HESC) project is a consortium of Japanese and Australian interests that spent almost \$500 million, including \$50 million of federal government money and \$50 million of Victorian government money, to build a pilot plant in the La Trobe valley (Secombe 2019). The pilot runs out of AGL's Loy Yang complex, using brown coal to produce hydrogen through a gasification and gas-refining process. Once into the commercial phase, carbon dioxide will be captured and stored in a process known as carbon capture and storage (CCS) (HESC 2021). During the pilot years of

2020 and 2021, carbon offset credits have been purchased to mitigate emissions from the pilot. The goal from the pilot would be to produce 3 tonnes of hydrogen by using 160 tonnes of brown coal and emitting 100 tonnes of carbon dioxide during 1 year of operation (Seccombe 2019).

A green hydrogen project is under construction in the Gladstone region of Queensland which is set to deliver 3 gigawatts of capacity using electrolysis and renewable energy. The plant is a joint venture between the state-owned electricity generator Stanwell and the Japan-based Iwatani Corporation. The facility will be export-oriented, creating about 5,000 jobs for people in regional Queensland and is expected to generate around \$4.2 billion in hydrogen exports including \$10 billion for the Queensland economy. The Aldoga plant will be located near the proposed Central Queensland Renewable Energy Zone where the 5000 MW required to power the plant will be produced (Vorath 2021).

Food transition?

Regenerative agriculture means farming that is both sustainable and productive (Dent and Boincean 2021: x). Specifically, there is an emphasis on promoting and rebuilding soil ecology without the use of chemical inputs. The term is bound up in a burgeoning scholarship on alternative approaches to managing food systems. Far from the ivory towers of academia, a group of 24 landholders in central Queensland have created a peer-to-peer (P2P) network for generating and disseminating regenerative farming practice. The group is a 'mentoring program' of sorts involving the not-for-profit Fitzroy Basin Association (FBA) and consultancy firm RegenAg. The FBA and RegenAg are part of an emerging division of labour in the regenerative agriculture industry. The term sustainable agriculture is also used in the literature, but it relates more specifically to either modifying and improving the efficiency of agriculture or promoting certified organic, local and related systems of agriculture (Johnson 2006). State-adjacent not-for-profits like FBA tap government grant schemes to fund their activities, promoting what industry players deem best practice.

The central Queensland P2P network formed after a 2018 Regen Ag biofertilizer workshop delivered with funding from the Federal government's National Landcare Program. Ongoing funding from the Queensland government's Reef Water Quality program keeps the P2P network active. RegenAg remains involved and is part of a growing market

of consultancy firms offering advice and management capacity for landholders looking to break into the lucrative markets of organic and sustainably produced food goods.

There are other initiatives like the CQ P2P network in Queensland and throughout Australia. McCarthy and Schurmann's 2015 study of barriers to adoption of sustainable horticulture methods in northern Queensland found that resistance to innovation derived in large part from technology and costs associated with chemical-free farming, lack of information and support for engaging the organic accreditation system and the fear of losing competitive advantage if information was shared (2015: 15). Other studies of barriers to adopting sustainable farming practices in Australia and Europe have borne out similar findings. The association of 'good farming' with 'high yields and tidy fields' *i.e.*, lack of weeds, is one commonly cited point of resistance to adopting chemical-free methods (Sutherland and Darnhofer 2012).

Another prominent theme is the cost-price squeeze, wherein the potential for reducing inputs relative to yield compels farmers to adopt low-input methods (Sutherland 2011). The food transition is therefore driven by an imperative to expand production, minimise inputs and maintain profitability within volatile commodity markets and intensified competitive pressures owing to highly concentrated industry structures for technology and intellectual property.

Table 2 offers a very brief sketch of what a SoP-CLP analysis of what food and energy transitions in Australia might look like. Further elaboration and investigation is clearly required. The purpose of this short exercise is to demonstrate how the pioneering resource-curse studies might be built upon to go beyond the management of extractivism and toward transcending it altogether. At the very least, the discussion of food and energy SoPs here shows just how difficult it will be to challenge an extractivism that is globally integrated, locally entrenched and is given meaning through complex material structures and processes manifesting concretely in the lives of people today.

Table 2: Food and Energy SoP Intersections

SoP	Vertical systems			
	Production	Distribution	Exchange	Disposal
Food	Higher production costs associated with low-input methods	Supply chain issues for transporting perishables without chemical inputs	Higher prices of certified organic/sustainable products less competitive against cheaper alternatives, especially with high inflation	Lack of infrastructure for organic waste management in agricultural regions
Energy	Incomes for workers in coal communities	Spatial inequalities in access to grid/in situ renewables like solar	Access markets for 'green' energy	Lack of recycling infrastructure for renewables like solar

Conclusion

This article has challenged calls for reversing the resource curse in Australia, citing the notion of the resource curse itself as an obstacle to the goal of transcending extractivism amid the climate crisis. The $E_{RB/RC}$ nexus, wherein the best possible outcome is to manage the gains from extractivism equitably and with a view to scale down some mining activities, is considered to be severely limiting in the context of the pressing need, outlined by the latest IPCC report, for mitigation and adaptation strategies to address global warming. The SoP-CLP approach might provide a superior framework of analysis because, unlike the resource-curse approach, the organisation of production and consumption in extractive industry can be examined critically rather than reproduced, albeit in modified form, as the basis for a redistribution of mining revenues. Perhaps most importantly, the notion of CLP allows the investigation of extractivism in Australia to consider how the historical evolution of specific forms of land ownership and control sustain, or represent opportunities for transcending, the durability of extractivism in the 21st century.

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