

ESSAYS ON INTERNATIONAL DEVELOPMENT:

Natural Resources and Development: Past, Present, and Future

- AND -

What Makes Cooperatives Work? Social Dynamics and International Development

by

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Abstract

Essay 1: Natural Resources and Development: Past, Present, and Future

What role do natural resources play in development? In the past, societies were dependent on their immediate natural environments for survival. As industrialization and globalization took hold, however, resources became more than just a means of subsistence. In today's world, resources are both mobile and valuable, which can have positive and negative impacts on development. Looking to the future, the potential for resource scarcity to have a significant impact on international development cannot be overlooked. Potential approaches to managing resource scarcity and intergenerational equity must therefore be considered.

Keywords: Natural resources; resource curse; sustainability; comparative development; sustainable development

Essay 2: What Makes Cooperatives Work? Social Dynamics and International Development

Cooperatives should be autonomous and independent from external interference. However, in the context of international development, would-be cooperators often lack the necessary skills and resources required to establish and operate successful cooperative businesses. This essay explores this paradox by outlining the social dynamics at play in cooperatives and suggesting how international institutions and governments can aid the formation of cooperatives while still maintaining the most important aspects of spontaneous cooperation.

Keywords: Cooperatives; social capital; free-riding; cooperation

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List of Acronyms

EITI	Extractive Industry Transparency Initiative
ESOP	Employee Shareholder Option Plan
GDP	Gross Domestic Product
ICA	Industrial Cooperative Alliance
ILO	International Labour Organization
IPD	Iterative Prisoners Dilemma
MSI	Multi-Stakeholder Initiative
TNC	Transnational Corporation
UN	United Nations
UNEP	United Nations Environment Program
VPHRS	Voluntary Principles on Human Rights and Security
WCED	World Commission on Environment and Development

ESSAY 1:

NATURAL RESOURCES AND DEVELOPMENT: PAST, PRESENT, AND FUTURE

1. Introduction

Natural resources have always played an essential role in sustaining the existence of humankind. A society's access to natural resources can therefore be regarded as crucial and beneficial for development. However, it is becoming evident that an abundance of resources can often be more of a curse than a blessing, especially in less developed countries. The 'resource curse' has been discussed widely in the literature, and various viewpoints abound regarding how resources impact development today and how they may impact development in the future. Given that resources are becoming increasingly scarce relative to our patterns of consumption, the dynamics of development in resource-rich states will likely become more complex with time. Indeed, it could be argued that development in the future will depend on the responsible and sustainable use of natural resources.

The objective of this essay is to explore the themes outlined above, with the objective of providing a broad sense of the ways scholars have approached the question, "what role do natural resources play in development"? For the sake of organization, I have divided the literature into the broad themes of the past, present, and future of resources and development. The scope of this essay is by no means comprehensive; however, I have endeavoured to present the most common themes that arise in the literature. The discussion is also somewhat skewed towards the discipline of

economics, with some consideration for pertinent contributions from other disciplines, such as ecology and political economy.

Following a brief definitional discussion, I begin Section 2 by considering economic growth theory and how natural resources are taken into account. I then look at resources in the context of comparative development to investigate their role in the relative success and failure of the development of societies. In Section 3, I move to a discussion rooted in contemporary phenomena, with a focus on the resource curse. This includes a review of key arguments pertaining to the existence of the curse, and an overview of the key mechanisms through which it may be manifested. In Section 4, I consider resources from the perspective of future development, beginning with a discussion of sustainability at a theoretical level, followed by an overview of the key debates in sustainable development literature. To conclude this essay, I highlight key themes and provide policy considerations for political and institutional leadership.

1.1. What are Natural Resources?

At its most basic, natural resources are simply goods that are derived from the environment. As such, it can be said that natural resources include everything from water to animals, from metals to oil and gas. In the sense that the planet is a more or less self-contained system, all of the things that we consume can be said to come from natural resources.

A key distinction can be made between renewable and non-renewable resources. As the terms imply, renewable resources are those that regenerate and replenish themselves through natural cycles. These include agricultural products, plants, animals, wind, solar, and water to name a few. Non-renewable resources, similarly, are those that do not regenerate, or, as with fossil fuels, regenerate by prohibitively long geological processes. Key non-renewable resources include petroleum, natural gas, coal, and minerals (UNSTATS, n.d.). Renewable resources, therefore, have the potential to provide benefits in perpetuity provided they are managed responsibly. Non-renewable resources, on the other hand, can theoretically eventually reach a point where they are exhausted. In the case of metals and other recyclable materials, some consideration can

be made for reuse, however, as Krautkraemer (2005) notes, “recycling durable nonrenewable resources can increase the life of a given resource stock, but 100 percent recovery and reuse is not practical, so the process cannot continue indefinitely” (p.72).

Although I aim to provide a broad survey of the literature on natural resources in this essay, it can be argued that not all resources play an equal role in development. In particular, non-renewable resources often receive more attention than renewable resources. This is especially the case in the context of the resource curse, where oil, gas, and minerals often receive the most attention (Gelb, 1988). Other means of distinguishing between types of resources and their relative contributions to development have also been proposed. For example, Isham, Woolcock, Pritchett, and Busby (2005) propose the distinction between resources extracted from a narrow geographic or economic base, such as oil, minerals, and plantation crops, and those extracted from a wide base, such as wheat. They argue that resources extracted from a narrow geographic base have more detrimental effects than resources that are more diffuse. Thus, there is an argument that resources such as oil and gas could pose larger problems for development than resources such as livestock and agriculture (Isham et al., 2005; Murshed, 2004). That said, in their empirical explorations of the relationship between GDP growth and abundance of resources, Sachs and Warner (2001) argue, “changes in the definition of natural resources is not as quantitatively important as one might think” (p.831).

2. Past - Resources and the Development of States

Prior to industrialization, the livelihood of a society was largely dependent on resources within close proximity. Given that the distribution of resources was also highly heterogeneous between regions, it follows that a region’s endowment of resources may have played a role in how that society developed relative to others.

In this section, I will expand on this idea, focusing on the role that natural resources have played in the historical development of societies. I approach the question at two levels of thought. First, I approach the question at a theoretical level to understand proposed determinants of economic growth. This includes consideration of early growth models, as well as theories related to international trade and the 'big push'. Second, the question is approached at a more fundamental level, that is, to explore underlying drivers of growth. As Rodrik, Subramanian, and Trebbi point out (2002), technology and the accumulation of physical and human capital are commonly used in economic growth models to explain growth. However, these models do not address the question of *how* certain societies managed to accumulate more capital and innovate more rapidly than others (p.2).

2.1.1. *Growth Theory*

Early theories of economic growth did not consider natural resources to be an important input to the growth process. The Harrod-Domar model, for example, explains development in terms of the level of savings and investment in an economy (Harrod, 1939; Domar, 1946). Based on this model, economic growth depends on the savings rate of the economy, as well as the capital output ratio - the amount of capital required to produce a unit of output. Solow later built upon the Harrod-Domar model, introducing the concept of diminishing returns to scale and the impact of technology in what is now referred to as the neoclassical growth model (Solow, 1956; 1957). Neither of these models, however, includes a role for natural resources. Despite this and a score of additional limitations (Easterly, 1997), the underlying theory of the early growth models that links investment to economic growth came to dominate thinking on development economics and still plays a role today¹.

A key challenge of these early models is that they attribute growth to the inputs of labour and capital, with no consideration for natural resources. As Kneese (1988) summarizes:

¹ For a detailed discussion on the challenges of investment driven growth, see Easterly (1997).

The traditional economic view, as exemplified by the Harrod-Domar models (and their relatives and offspring), and building on the much older concept of a production function, attributed output to 'factors of production,' notably labour and capital. Yet, this seems to flagrantly contradict the fact that the economic system could not function for a minute without a large flow of available energy (essergy) and materials (p.289).

When faced with the question of how the scarcity of natural resources could factor into growth models, some scholars suggest that labour and capital can be substituted for resources, rendering the question unnecessary. Goeller and Weinberg (1978), for example suggest, "society will eventually settle into a steady state of substitution and recycling" (p.1). On the other hand, others have argued that assuming the substitutability of labour and capital is not realistic, and scarcity of resources will eventually impact development (Meadows, Rome, & Associates, 1972). This debate is discussed in further detail in the context of sustainable development in Section 4 of this essay.

2.1.2. *International Trade*

Another important consideration is the extent to which resources factor into trade. Unlike the Ricardian model of comparative advantage that considers labour to be the key determinant of comparative advantage, the Heckscher-Ohlin Model of trade also considers the influence of factor endowments. That is, it predicts that a country will tend to export commodities possessed by that country in relative abundance (Ray 1998, p.631). Although this can include labour and capital, it can also include natural resources, as identified by Leontief (1953). The implication is that countries endowed with valuable resources may have an incentive to focus on the export of these resources rather than develop industries based on manufactured goods. This can have implications for development due to the deterioration of terms of trade, as suggested by the Prebisch-Singer hypothesis (Prebisch, 1950; Singer, 1950).

The Prebisch-Singer hypothesis proposes that primary goods will become relatively less expensive than manufactured goods over time due to deterioration in the terms of trade. As summarized by Toye and Toye (2003), the significance of the thesis is that "it implies that barring major changes in the structure of the world economy, the gains from trade will continue to be distributed unequally (and, some would add, unfairly)

between nations exporting mainly primary products and those exporting mainly manufactures” (p.437). Thus, countries with a focus on resource exports relative to manufactures will experience deterioration in terms of trade over time, which could have an impact on development. In reality, however, evidence confirming the Prebisch-Singer hypothesis is mixed (Harvey, Kellard, Madsen & Wohar, 2010).

Taken together, these theories propose a bit of a conundrum. Countries with generous endowments of natural resources could have a comparative advantage in exporting them. Specializing in natural resource exports, therefore, should make everyone better off. However, reliance on that resource for exports could also tend to be detrimental to development over time due to deterioration in terms of trade.

2.1.3. *Natural Resources and the Big Push*

Finally, resources can also be considered in the context of the ‘big push’ theory. Originally proposed by Rosenstein-Rodan (1943) and later discussed by Murphy et al. (1989), the big push theory proposes, “the contribution of industrialization of one sector of the economy can enlarge the size of the market in other sectors” (1989, p.1004). Thus, industrialization of a single sector, such as those based on natural resources, may help develop the entire economy. Sachs and Warner (1999) explore this idea, investigating the possibility that the discovery and subsequent exploitation of resources could provide a ‘big push’ and drive countries out of poverty. They conclude that resources can provide support for economic growth, but only in the non-tradables sector.

2.2. Comparative Development – Explorations of the Past

Having discussed resources from a theoretical perspective, I now consider drivers of growth from a historical perspective. Two key themes of inquiry emerge here. The first theme is concerned with geographical endowments and the role that agriculture may have played in the development of nations. The second theme pertains to natural resources as a driver for technological innovation, particularly in the context of the Industrial Revolution.

2.2.1. *Geography as a Resource*

The task of determining the drivers of economic growth is complex, and it can be argued that there is no single explanation for why some countries have experienced superior economic growth compared to others (Sachs & Warner, 2001). That said a number of contributing factors have been proposed, including the role of human capital, innovation, institutions and, of most pertinence to this discussion, geography (North & Thomas, 1973; Rodrik et al., 2002).

The practice of looking at a country's endowments of resources to understand development can arguably be traced back to the 1950s. Baldwin (1956) for example explores the reasons why "certain parts of the 'backward' world have become enmeshed in what appears to be a vicious circle of poverty" (p.161). His model examines economies with differing agricultural resource endowments: one with resources conducive to plantations, and the other with resources suited to non-plantation commodities such as wheat. He concludes that non-plantation economies "tend to induce a faster and a more balanced type of development" (p.176). Watkins (1963) applies similar thinking to an analysis of the Canadian economy, while also considering the impact of technology. He concludes that the "basic determinants of Canadian growth are the volume and character of her staple exports and the ability to borrow, adapt, and marginally supplement foreign technology" (p.157).

A particularly popular area of inquiry, and one that is especially relevant to this discussion on resources, is the interplay between institutions and geography in development. It is known that 'good' institutions play an important role in the comparative development of societies (Acemoglu, Johnson & Robinson, 2004). What is contested, however, is the role that geography and corresponding agricultural endowments play in shaping the development of those institutions.

Engerman and Sokoloff (2002), for example, find that regions endowed with tropical geography were more likely to develop poor institutions than temperate regions due to mechanisms that lead to high and sustained inequality in tropical regions. Thus, they propose, because geography led to the development of particular institutions, geography is a key actor in comparative development. Jeffrey Sachs (2003) also finds

evidence in support of the direct impact of geography. Using a geographical variable based on the risk of contracting malaria, he finds a direct geographical effect on income.

Acemoglu et al. (2000) agree that institutions play a key role in economic development; however, they approach the question from the perspective of settler mortality. They propose that Western Europeans were more likely to settle in places with low rates of settler mortality; namely, non-tropical, temperate regions such as North America. Because Western Europeans brought along their 'good' institutions, the temperate regions in which they settled benefited from these institutions and the resultant advantages for economic growth. Thus, they propose, geography plays a role only inasmuch as it shapes the choice in institutions. In other words, institutions are the fundamental cause of growth, not geography. Easterly and Levine (2002) provide evidence in line with the mechanism proposed by Acemoglu et al., finding that geographic endowments affect development only through institutions. Similarly, in a 2002 study, Rodrik et al. conclude, "the quality of institutions trumps everything else" (p.4). Thus suggesting that geography has only a weak direct effect on development, and confirming the results of Easterly and Levine.

Although these findings differ in their interpretations of how geography relates to the development of institutions, they do indicate consensus that geography matters, at least to some extent. As Sachs (2003) notes, "there is a theoretical and empirical reason to believe that the development process reflects a complex interaction of institutions, policies, and geography" (p.9).

2.2.2. *Resources and Technological Innovation*

It can also be argued that geography may have played a role in innovation and the development of technology. Two views can be considered here, as summarized by Jared Diamond (1999):

Many Northern Europeans assume that technology thrives in a rigorous climate where survival is impossible without technology, and withers in a benign climate where clothing is unnecessary and bananas supposedly fall off the trees. An opposite view is that benign environments leave people free from the constant struggle for existence, free to devote themselves to innovation (p.251).

Thus, it can be argued that both benign and rigorous climates can support the development of technological innovation. However, the linkages between technology and resources are somewhat more complex than this, as will be explored here.

Prior to the advent of modern transportation, Intercontinental travel was possible only by great sailing ships, common beginning in the 1500s. However, long travel times and treacherous conditions rendered this mode of transport unfeasible for heavy and burdensome natural resources. While intercontinental trade did exist at the time, it was for the most part limited to “commodities with a high ratio of value to weight and bulk, such as spices, silk, and silver” (Findlay & O'Rourke 2002, p.16). Given that countries were limited to the use of local resources, it follows that those with ideal endowments, such as coal, may have had an advantage in the development of coal-based technology, which could in turn lend an edge in economic development. For example, Sachs and Warner (1995) note the rapid industrialization of Britain, Germany, and the United States in the late 19th century and the potential role played by coal and iron ore deposits (p.3). Indeed, England's endowment of coal is often cited as a key contributor to why the seeds of the Industrial Revolution were sown there rather than somewhere else² (Sachs & Warner, 1995).

The role of raw materials is, of course, relevant to countries other than England. For example, Habakkuk (1962) suggests that greater natural resource endowments in the United States helped explain why it eventually surpassed England. However, given the significance of the Industrial Revolution in ‘pulling Europe ahead’ of the rest of the world, it is the case that will be considered here.

Surface coal had been used for various purposes in Europe throughout history. However, it was not brought to the centre stage of production until the 1800s in England and time of the Industrial Revolution. Wrigley (1962) notes the importance of coal in this context as a substitute for previously used organic materials such as wood: “The

² For a detailed exploration of why industrial growth occurred in England, but not in similarly modernized regions, see Pomeranz (2001).

decisive technological change which freed so many industries from dependence upon raw organic materials was the discovery of a way of using coal where once wood have been essential” (p.4). He also links this shift in materials to economic growth, noting, “the removal of these constrictions is intimately connected with several important aspects of the rapid growth which occurred” (1962, p.1). That is, without the discovery of coal, it can be argued that industrialization would have likely been limited by the severe constraints of organic resources.

It is likely that coal allowed for higher intensity of production than wood, but this does not explain the innovation that occurred during the Industrial Revolution, nor does it explain why these innovations largely occurred in England. Clark and Jacks (n.d.) question the direct impact of England’s reserves on innovation, noting, “the income derived in England from the actual possession of the coal reserves was actually an extremely modest share of national income” (p.21). They also argue that the increase in coal production during that time was not driven by industrialization, rather, it was simply a result of increased demand.

On the other hand, Pomeranz (2001) makes a strong case for the role of coal endowments as a driver for the Industrial Revolution in Europe. However, he also considers the role of geography and chance. This is best described in reference to his discussion of why the Industrial Revolution occurred in Europe, rather than in China, which held similar endowments of coal. As he notes, European coal mines were more likely to suffer from flooding, an issue for which the earliest steam pump was invented to solve. Chinese mines, on the other hand, were more likely to suffer from ventilation issues and were thus not exposed to the early need to develop a pump. Pomeranz concludes, “Europe’s advantage rested as much on geographic accident as on overall levels of technical skill” (p.62).

Although endowments of coal may have played a role in the industrialization of Europe, this is far from an accepted cause. As Polanyi (1944/2001) writes, “It has been shown conclusively that no one single cause deserves to be lifted out of the chain and set apart as *the* cause of that sudden and unexpected event” (p.42).

3. Present - The Resource Curse

At its most general, the term resource curse refers to the tendency for resource-rich countries to have poor levels of economic development. As Auty (1993) observed early on, “not only may resource-rich countries fail to benefit from a favourable endowment, they may actually perform worse than less well-endowed countries” (p.1).

One of the most cited empirical investigations of the resource curse was carried out by Sachs and Warner in 1995. They investigate the relationship between resources and growth by looking at what they refer to as ‘natural resource abundance’ relative to GDP. They define natural resource abundance as the ratio of natural resource exports to GDP. Controlling for other contributors to economic growth, their investigation identifies a negative relationship. As Gylfason (2007) suggests, however, a distinction should be made between resource abundance and resource dependence. As he summarizes, “By abundance is meant the amount of natural capital that a country has at its disposal: mineral deposits, oil fields, forests, land, and the like. By dependence is meant the extent to which the nation in question depends on these natural resources for its livelihood” (p.8). Thus, the argument can be made that rather than investigating the role of resource abundance, Sachs and Warner were instead investigating the role of resource dependence in their 1995 study (Brunnschweiler & Bulte, 2008). Sachs and Warner (2001) counter this argument by noting that although it is possible to examine resource abundance by considering resources on a per capita basis, because they seek to examine the importance of resources for the economy, their approach is ideal (p.830).

Brunnschweiler and Bulte (2008), however, question this approach, suggesting that the practice of scaling by the economy “implies that the ratio variable is not independent of economic policies and the institutions that produce them” (p.249). They conclude that this ratio is likely to suffer from endogeneity problems, and suggest that a better measure of abundance would include some measure of resource stocks. Likewise, Lederman and Maloney (2007) challenge the results of Sachs and Warner, replicating their study using net exports of natural-resource intensive commodities per worker as a measure of resource abundance. In this way, they find that the “negative

impact of natural resource abundance on growth disappears (p.4). Additional econometric concerns are raised by Van der Ploeg and Poelhekke (2010).

Despite these methodological concerns, there is still strong support for the existence of the resource curse, not least because many resource-rich countries continue to be hampered by low growth.

3.1. Explanations for the Curse

Although the existence of the resource curse has come to be more or less accepted, consensus has not been reached on the underlying causal factors. As Lederman and Maloney (2007) note, “where a negative impact of natural resources has been identified, the postulated channels through which it may work vary widely” (p.3). In this section, I review key theoretical explanations that have been proposed. I use three main themes to organize this discussion, inspired by those suggested by Stiglitz (2004).

The first theme pertains to the extent to which natural resources impact the greater economy of a country. In particular, this refers to the ‘Dutch disease’ and the impact of resource exports on the development of a diversified economy. Next, I look at the role of volatility of commodity prices and how this introduces considerable uncertainty into non-diversified economies. The final theme is more complex and covers mechanisms related to governance. It has been suggested that resource-rich countries with poor governance are more likely to suffer from the resource curse than are countries with good governance (Collier, 2010, p.45). What is less agreed upon, however, are the mechanisms through which poor governance stifles economic growth.

3.1.1. *Dutch Disease*

The term Dutch disease was coined in response to changes that occurred in the Dutch economy in the 1970s following the discovery of natural gas (the Economist, 1977). It was proposed that countries that export large amounts of natural resources might also experience an appreciation in the domestic exchange rate, hampering the development of a diversified economy (Van Wijnbergen, 1984; Corden & Neary, 1982). Based in the premise of export-led growth, the Dutch disease is significant because it

may impair the development or sustainability of a tradables sector. Sachs and Warner (2001) summarize the mechanism, describing the impacts on the tradable and non-tradable sectors in an economy:

Positive wealth shocks from the natural resource sector (along with consumer preferences that translate this into higher demand for non-traded goods) creates excess demand for non-traded products and drives up non-traded prices, including particularly non-traded input costs and wages. This in turn squeezes profits in traded activities such as manufacturing that use those non-traded products as inputs yet sell their products on international markets at relatively fixed international prices. The decline in manufacturing then has ramifications that grind the growth process to a halt (p.833).

The feared result of the Dutch disease, then, is deindustrialization of the economy (Frankel, 2010). As discussed in Section 2, the Prebisch-Singer theorem suggests that deindustrialization could have detrimental long-term impacts if it results in declining terms of trade. It can also be argued that developing the manufacturing sector may be more beneficial for long-term growth than relying solely on natural resources (Matsuyama, 1992). In this case, an argument can be made to invest in the manufacturing industry, even if a country is awash in natural resources. On the other hand, one could argue that if a country is rich in primary commodities they should focus on the extraction of these resources knowing that upon exhaustion of the resources or a change in commodity prices, the economy will adjust as necessary (van der Ploeg, 2011, p.378).

A decline in manufacturing also has implications from the perspective of 'learning by doing' and the development of human capital (Krugman, 1987; van der Ploeg, 2011). As Krugman (1987) describes, if the abundance of natural resources is large enough that it leads industries to relocate to other countries, the impact on the manufacturing capability of the home country could be permanent (p.50). In other words, the economy could fall permanently behind due to lagging human capital relative to countries that enjoyed a head start in the development of a manufacturing sector.

3.1.2. *Commodity Volatility*

Another key pathway that has been proposed to explain the resource curse is the impact of commodity price volatility and the corresponding variability of export revenues on the greater economy (Cavalcanti, Mohaddes & Raissi, 2011). By investigating commodity terms of trade volatility, they find evidence that “the export diversification of primary commodity exporting countries contributes to faster growth” (p.2). That is, countries with a narrow commodity base may be more severely impacted by commodity price volatility. Van der Ploeg and Poelhekke (2010) find similar results, concluding “the total effect of resource dependence on growth is negative in highly volatile countries and positive in stable countries, so that the quintessence of the resource curse appears to be the notorious volatility of commodity prices” (p.52). Collier and Goderis (2007) approach the issue of commodity prices by investigating the long-term impacts of commodity booms. They find that rather than fueling an opportunity for transformative development, commodity booms will, in the long run, significantly impact economic growth (p.14).

Fluctuations in commodity prices could impact development in a number of ways. For example, governments may be more likely to overspend during periods of high prices, and may be slow to react when prices decrease. Similarly, Cuddington (1989) describes mismanagement of the proceeds from commodity booms in the 1970s, “which left many developing countries with overextended and inefficient investment programs, excessive foreign debt, and large structural deficits” (p.162). Frankel (2010) suggests developing countries may be affected by fluctuations more than developed countries due to the inability of governments to moderate cycles using monetary and fiscal policy (p.19). Left with large debts and reduced means of servicing them, governments may also be forced to cut back on the provision of services which could impact the development of human capital.

3.1.3. *The Resource Curse and Governance*

Some of the most widely discussed explanatory arguments regarding the causes of the resource curse focus on the role of governance. In particular, there is evidence that the resource curse is more likely to be present in countries with poor governance. A popular illustration is to compare the contrasting economic experiences of Norway, a

resource-rich country with strong governance, and Nigeria, a resource-rich country with poor governance (Collier, 2010, p. 47). If it is established that the resource curse is limited to countries with poor governance, it then follows to ask: Is it the discovery of resources that leads to deterioration of governance, or is it that those countries afflicted by the resource curse suffered from poor governance to begin with? Collier and Goderis (2007) address this question statistically, concluding that if a country enters a commodity boom with good institutions, the boom is likely to have positive effects. If the country has poor governance, the resource curse is likely to appear (p.9). Thus, it is the starting point of governance that matters. A well-governed state is not likely to be corrupted by resource windfalls. Brunnschweiler and Bulte (2008) support this view, as they note:

Contrary to the paradoxical result that resource 'abundant' countries tend to invite rent seeking and therefore suffer from worse institutions, we find that countries with certain institutional designs may fail to industrialize - and failing to develop significant non-resource sectors may make them dependent on primary sector extraction (p.250).

On the other hand, some scholars provide arguments in line with the opposing view that resources can have a detrimental impact on institutions and governance, acting through a variety of mechanisms, many of which are driven by rent-seeking. For example, there is the proposed mechanism of 'rent-cycling', proposed by Auty (2001). As Frankel (2010) summarizes, countries with high rents are more likely to experience rent-seeking behaviour as individuals compete for a finite amount of resources. They are also, therefore, less likely to enjoy economic growth (p.15).

Similarly, Mehlum, Moene, and Torvik (2006) suggest that 'grabber friendly' institutions, those in which rent-seeking and production are competing activities, are more likely to result in entrepreneurial energy being guided into unproductive activities due to a weak rule of law, malfunctioning bureaucracy, and corruption (p.3). Likewise, in their study of economies dependent on point source resources such as oil and gas, Isham et al. (2005) conclude, "a country's natural resource endowment makes for poor institutions" (p.162).

Poor institutions can also impact economic growth through the mechanism of corruption, as Leite and Weidmann (1999) suggest. They argue that resource-rich states

may experience greater incentives for rent-seeking, which can increase the level of corruption. As Mauro (1995) notes, corruption can result in lower investment, which can in turn lead to lower economic growth.

An additional question that has been raised with regards to the resource curse and governance is the role of democracy. That is, if good governance predicts better outcomes for resource-rich states, are democracies more likely to have positive outcomes compared to autocratic states? Collier and Hoeffler (2009) investigate this question, and find that in developing countries “the combination of resource rents and democracy has been significantly growth-reducing” (p.305). In other words, democracy may not deliver ideal outcomes in resource-rich states.

Ross (2001) also investigates the linkages between resource wealth and democracy, focusing particularly on three possible explanations why resources tend to have an antidemocratic effect on governments. He first proposes a ‘rentier effect’ wherein governments use resource incomes to provide low tax rates and patronage to citizens, resulting in lower pressure for accountability. Secondly, he proposes that resource wealth may be used to bolster security such that movements for democracy will be repressed. Lastly, he suggests that the demand for democracy may be impeded because resource-based growth may not bring about the social and economic changes associated with the drive for democracy (p.328).

Another governance related mechanism through which resource wealth can impact development is by discouraging savings and investment in the economy. Van der Ploeg (2011) hypothesizes that resource-rich countries may be poor savers due to anticipation that better times (i.e. higher prices) may be ahead. He also suggests that lower savings rates may result if there are multiple factions in the country competing for resource rents (p.401). Sachs and Warner (1997), on the other hand, claim that there is no evidence that abundance is associated with lower savings and investment.

Looked at another way, Atkinson and Hamilton (2003), find that countries that suffer from low growth are those where the *combination* of natural resource, macroeconomic, and public expenditure policies have led to a low rate of genuine saving. That is, in countries where investments in physical and human capital are not

made at a rate that replaces the natural capital being extracted, the resource curse is more likely. Savings are important from the perspective of investment in the economy, as discussed previously with regard to the Dutch disease, but low savings can also potentially impact the development of human capital. If all of the proceeds from resources are being spent rather than invested in things such as education, this can have detrimental effects. For example, Gylfason (2001) presents evidence that nations rich in natural resources systematically under-invest in education as a proportion of national income. They consequently pay less attention to the accumulation of human capital, something that is crowded out by their rich endowment of natural capital.

4. Future - Natural Resources and Sustainable Development

An ever-growing population, coupled with increasing per capita consumption of resources, continues to bring into question the ability of humanity to sustain itself (Arrow et al., 2004; Cassils, 2003). While some believe that the impacts of resource scarcity will eventually be insurmountable, others believe that technology and substitution will fend off societal collapse (Goeller & Weinberg, 1978). These ideas have spawned a wealth of literature focused on sustainability and how intergenerational equity can be achieved. These matters are considered in this section.

I begin by providing context on the term sustainable development and the debates surrounding its definition. Next, I delve into the debate concerning the possibility for substitutes and technological innovation to overcome resource scarcity. This includes consideration of the concepts of weak and strong sustainability, as well as genuine savings.

4.1. What is Sustainable Development?

The term sustainable development is subject to varying definitions depending on in which realm it is being discussed (Lélé, 1991). The most widely cited definition of sustainability was proposed in the 1987 Report, *Our Common Future* (World Commission on Environment and Development (WCED), 1987, Chapter 2). According to this report, sustainable development is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. This definition admittedly leaves some room for interpretation, particularly with regards to how needs are defined and how global inequality factors into such a definition (WCED, 1987). Likewise, there is the question of what is meant by ‘development’. In the context of economic sustainability, the term is often equated to growth in the economy based on some measure of consumption, such as GDP (Sachs & Warner, 1995). However, some scholars argue that additional components of quality of life must be included in this definition (Lélé, 1991). This measure of development also leaves out the value that individuals derive from the environment, which can increase their utility (Ayres, van den Bergh, & Gowdy, 1998).

Additionally, there is some debate about how to define the term ‘sustainable’. In some contexts, sustainable implies the maintenance of a steady or increasing utility (Solow, 1974), which can be interpreted as steady or increasing economic growth without impacting the ability of future generations to do the same. As Lélé (1991) points out, this implies that “sustainable development is an attempt to have one’s cake and eat it too (p.618). Pezzy and Toman (2005) propose sustainability to be “equity across several generations” (p.122), although they are unclear as to what constitutes equity.

This raises the question: Is it really possible to have steady or ever increasing quality of life when faced with a declining stock of the resources from which we largely derive utility? The answer to this question depends on one’s optimism with regards to the prospects of technology and substitution. The terms ‘weak’ and ‘strong’ sustainability have been developed to capture these viewpoints.

4.2. Weak and Strong Sustainability

The crux of the distinction between the concepts of weak and strong sustainability turns on the extent to which they assume that physical and human capital can substitute for natural capital. That is, to what extent can losses in natural capital (in the form of natural resources) be substituted for by investments in other forms of capital?

Pearce and Atkinson (1993) first proposed the term ‘weak sustainability’ in the context of their discussion of sustainability indicators. They proposed a measure of weak sustainability such that in the presence of environmental degradation, the overall level of capital stock should not decrease over time (p.103). Likewise, they suggest, “a *strong* sustainability indicator would evolve identifying and measuring ‘critical’ natural capital such that any positive depreciation would be a sign of non-sustainability” (p.106).

From these beginnings, we arrive at how the terms are used today. As summarized by Dietz and Neumayer (2004), “weak sustainability typically assumes infinite substitutability of capital, while strong sustainability is based on the belief that natural capital is either entirely non-substitutable, or that a portion of it – the so-called *critical* natural capital – cannot be replicated by man-made capital” (p.1). Although the distinction between weak and strong sustainability could be seen by some as an expression of optimism for human ingenuity, some suggest that the debate is better considered as a fundamental debate between economists and ecologists (Arrow et al., 2004; Pezzy & Toman, 2001). Or, as Ayres (2007) suggests, the debate is between strongly neoclassical viewpoints on the one hand, and those of ‘entropy pessimists’ on the other (p.115).

4.2.1. Weak Sustainability

The notion of weak sustainability has its roots in early economic explorations of conservation. In 1931, Hotelling tackled the issue of exhaustible resources, considering the rate at which non-renewable resources should be extracted in order to enjoy the maximum value over time (Hotelling, 1931). Some decades later, the issue of non-renewable resources resurfaced, this time in response to growing interest in the concept of intergenerational equity. Hartwick (1977) and Solow (1974) were early contributors to

these topics, linking natural resources to various forms of capital. They proposed theories to calculate the amount of capital investment that should be made to offset the use of non-renewable resources and ensure a non-declining standard of living for future generations. Hartwick's proposition came to be known as *Hartwick's Rule*, which states, "society should invest in reproducible capital precisely the current returns from the use of flows of exhaustible resources in order to maintain per capita consumption constant" (Hartwick 1978, p.347).

Arising from this idea that the stock of capital should remain constant, and motivated by the desire to develop methods of green accounting, the idea of 'genuine savings', also referred to as 'adjusted net savings' was created (Hamilton 1994). The World Bank (2010) calculates genuine savings as follows:

Genuine savings = gross savings + education expenditure - depreciation of fixed capital - depletion of natural resource - pollution damage

Thus, genuine savings represents the true rate of savings given the depletion of natural capital. If the genuine savings of a country is less than zero, it can be said that it does not exhibit weak sustainability. However, as Dietz and Neumayer (2004) highlight, a positive genuine savings rate does not necessarily indicate that it *does* exhibit weak sustainability. This is due to the possibility that the economy in question had experienced negative savings rates at some point in the past (p.278). Additional drawbacks of weak sustainability noted by Dietz and Neumayer include poor accounting for environmental pollution, inaccurate measurement of natural capital depreciation, and the challenge of using estimates at a single point in time (p.13).

Today, the genuine savings approach has been shown to have some relevance in reflecting the extent to which resource-rich countries are reinvesting the proceeds of resource extraction into other forms of capital (Hamilton, 2001, p.44). However, as Ayres et al. (1998) note, weak sustainability is not a perfect measure. They observe, "a substitution of natural for manufactured capital may be one-way: once irreplaceable natural resources are transformed into manufactured capital, there is no way to return to the original situation" (p.3). Thus, although weak sustainability provides some measure

of sustainability, it might not sufficiently account for the unique value that resources provide.

4.2.2. Strong Sustainability

As a counter to the idea of weak sustainability, strong sustainability proposes that natural capital, or at least, 'critical' natural capital, is irreplaceable, and therefore must be preserved or enhanced. It also calls for minimum amounts of other types of capital to be maintained, including economic and social capital (Ayres et al., 1998). Here too there is a debate regarding to what extent natural capital must be preserved. However, there is some agreement that rather than preserving all components of the ecosystem, a focus should be placed on those assets that provide essential and irreplaceable services (Ayres et al., 1998; Pezzy & Toman, 2005).

Daly (1990) provides an outline of the form strong sustainability could take. In the case of renewable resources, he suggests that "harvest rates should equal regeneration rates" and that "waste emission rates should equal the natural assimilative capacities of the ecosystems into which the wastes are emitted" (p.2). He also argues that the use of non-renewable resources should be limited to what can be replaced by a renewable substitute (p.4). Similarly, Howarth (1997) advocates for strong sustainability, suggesting that there is a "specific duty to conserve natural assets unless substitutes or reproduced capital or new technologies are made in their stead" (p.576).

Thus, strong sustainability provides a means to consider sustainability in a manner that better accounts for the irreplaceable aspects of natural capital. This is especially pertinent with regards to the issues of climate change and the degradation of ecosystem services.

5. Conclusion and Considerations

To conclude this essay, I reflect on two key issues that are likely to be of growing significance for international development. First, I discuss the management of resource revenue and consider potential approaches that could be implemented to help ensure responsible use of revenues and help the prosperity of future generations. The second issue pertains to how the current economic system, based as it is on the quest for perpetual economic growth, can be reconciled with the finite nature of natural resources. Can economic growth be sustained while also using fewer resources?

5.1. Management of Resource Revenues

As discussed in this essay, a key approach to sustainability calls for saving resource rents and investing them in alternative forms of capital. Although this approach has proved to be effective in jurisdictions such as Norway and Botswana, the effective management of resource royalties remains elusive in many resource-rich developing countries (van der Ploeg, 2011). This is because revenue spending decisions remain in the hands of local governments, and these governments may choose to spend the proceeds rather than invest them, resulting in poor outcomes for development (Atkinson & Hamilton, 2003). This leads to the question: assuming that it is in the best interests of the world at large to help improve the outcomes of the developing poor in resource-rich states, how can governments be encouraged to act more responsibly?

One manner in which some influence can be held over the actions of resource-rich governments is through extractive industry Multi-Stakeholder Initiatives (MSIs) such as the Voluntary Principles on Human Rights and Security (VPHRS), The Kimberly Process, and the Extractive Industries Transparency Initiative (EITI).

The EITI holds special potential as a means of improving the transparency of government spending of resource royalties by providing a platform through which companies can disclose payments and governments can report revenues (EITI, 2011). If government revenues are reported, it is argued, stakeholders can apply pressure for the responsible use of these funds. Although the EITI is certainly a step in the right direction,

there have been challenges in ensuring the cooperation of governments (Collier, 2010, p.82). As Peters, Koechlin and Förster (2009) note, “multi-stakeholder approaches should be seen as complementary to, and not in substitution of civil society advocacy and activism on the one hand, and legislation on the other” (p.109). Likewise, even if the EITI helps to ensure governments increase their rates of savings of royalties, there remains the question of how those royalties should be invested (Collier, 2010).

There is also the question of the role of Transnational Corporations (TNCs) in the extractive industry and to what extent they should be required to ensure the responsible investment of royalties paid to governments. Participation in MSIs is a good step, however, it can be argued that a key motivator for TNCs to participate in MSIs is not the urge to do the right thing; rather, they prefer the option of voluntary regulation to the potentially profit-crushing requirements of strict legislation (Schumacher, 2004). Indeed, Western governments are increasingly introducing extraterritorial legislation targeted at corrupt practices carried out by businesses on foreign soil³. An additional challenge of voluntary regulation is that not all extractive companies will volunteer to participate. This is increasingly a concern with regards to Chinese enterprises, which have been taking an interest in Africa’s resources (Alden, 2007). However, there is also evidence that Chinese extractive industries will not escape the view of international attention and pressure for human rights accountability.

5.2. The Future of Sustainability

Due consideration for the role of resources in development may have been lacking in early models of economic growth, but it is clear from this discussion that due consideration may also be lacking today. This is because a key goal of sustainable development from the perspective of economics relies on the goal of non-declining or

³ Examples include the Canadian Corruption of Foreign Public Officials Act, The UK Bribery Act, and the United States Foreign Corrupt Practices Act.

increasing utility. However, is it realistic to presume that this kind of economic growth can continue even in the face of declining resources?

In response to interest in the sustainable use of resources, the ideas of impact and resource decoupling are gaining in popularity. Resource decoupling involves “reducing the rate of use of (primary) resources per unit of economic activity” (UNEP, 2011, p.4). Similarly, impact decoupling requires “increasing economic output while also reducing negative environmental impacts” (UNEP, 2011, p.4). The distinction is that resource decoupling seeks to raise the productivity of resources and address issues of scarcity, while impact decoupling instead focuses on the outcomes or impact of the use of that resource – that is, using the resources more wisely or more cleanly, but not addressing issues of scarcity (UNEP 2011). Both forms of decoupling, however, seek to remove economic activity from the use of resources, which could be a key success factor in the pursuit of sustainable growth.

In the preceding pages, I have provided a broad overview of the role of natural resources in the context of the past, present, and future of development. As outlined in this essay, the role that resources play in development has changed over time. In pre-industrial times, the development of societies was largely limited by geography; thus proximity to resources may have impacted the relative success and failure of development. As industrialization and globalization took hold, the role of resources became considerably more complex, and the ability to trade resources resulted in new implications for economic growth, particularly pertaining to issues of governance and the management of rents. Today, the resource curse continues to plague resource-rich developing states, and the long-term implications of the phenomenon, especially in light of growing resource scarcity, remain unknown. Successful development in the future will likely rely on responsible use of resources, however, how this will be achieved is as yet unknown.

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ESSAY 2:

WHAT MAKES COOPERATIVES WORK?

SOCIAL DYNAMICS AND INTERNATIONAL DEVELOPMENT

1. Introduction

Cooperative behaviour has long played a role in improving the livelihood of people and communities by providing a means to pool risk and share responsibilities and opportunities. Today, cooperatives continue to be popular as an organizational form, and the International Cooperative Alliance (ICA) estimates that over one billion people are members of cooperatives today (ICA, 2011).

One area in which cooperatives are becoming more popular is as an approach to poverty reduction in less developed countries. Although some scholars have highlighted the challenges cooperatives face in this capacity (Birchall, 2004, p4; Lélé, 1981), international institutions have nonetheless begun to place increased confidence in the power of cooperatives to assist with development and fighting poverty. The United Nations proclaimed 2012 as the International Year of Cooperatives, and in a resolution adopted by the general assembly state that cooperatives are “becoming a major factor of economic and social development and contribute to the eradication of poverty” (UN, 2009, Resolution 64/136). The International Labour Organization (ILO) similarly recommends cooperatives as an approach to economic and social development (2002). In his discussion on cooperatives in the context of the Millennium Development Goals, Johnston Birchall (2004) provides many examples of instances where cooperation has been effective at reaching the poor.

What is less documented, however, is how to best encourage the formation of cooperatives. It is acknowledged that cooperatives should be formed voluntarily and that they should be autonomous from outside interference (ICA, 2007). It follows that the best way to support the development of cooperatives would be to encourage them to form naturally or organically rather than to mandate their formation in areas where they might not otherwise develop. However, it is also known that in the context of development, many would-be cooperators lack the skills needed to successfully establish and operate a cooperative business. This introduces an important paradox: Cooperatives should be voluntary and autonomous, but they may also require significant help from outsiders to be successful.

The purpose of this essay is to explore some of the dynamics behind this paradox in greater detail with a focus on the social factors that drive and sustain cooperation. This knowledge can then be applied to inform how international institutions and governments can aid the formation of cooperatives while still maintaining the most important aspects of spontaneous cooperation.

This essay is organized as follows. I begin with an overview of pertinent contextual issues, including a discussion of the history of cooperatives, an overview of ideological debates, and consideration for how the term cooperative can be defined. Next, I explore the factors that motivate cooperation, from both an economic and a social perspective. This is followed by an introduction to the concept of free-riding, how it can potentially impact the success of cooperatives, and factors that may help mitigate the incentive to free ride. To conclude, I consider the implications these dynamics could have, and provide appropriate recommendations to foster the development of social cooperatives.

2. Cooperatives in Context

Throughout history, and in civilizations the world over, individuals have elected to combine their efforts to realize joint benefits through cooperation. Early on, individuals cooperated in a way that can best be described as informal. That is, cooperation was based on informal agreements rather than in the context of the formal legal frameworks that exist today. While informal cooperation remains common, it has generally become much more formalized. Indeed, today cooperatives are considered their own category of business organization in many countries, and a wide range of supportive institutions have been developed to support their formation and ongoing success. In this section, I will explore the aforementioned trends of informal and formal cooperation throughout history, and will also consider cooperation in the context of economic decision-making. In particular, I will provide an overview of the ideological viewpoints that have been used to explain economic decision-making. I conclude the section by considering how the term cooperative can be defined, as well as noting the distinction between cooperatives that are socially formed and cooperatives that are externally motivated.

2.1. Historical Context

Both formal and informal cooperation have played important roles in development throughout history, however, from a modern perspective, the earliest forms of cooperation were undoubtedly informal. Many of these ancient practices were entrenched in the culture of less developed societies up until recently. Anthropologist Clifford Geertz (1962), for example, provides many examples of cooperation in his ethnographic accounts. Geertz recounts the ancient traditional cooperative elements of a Javanese village, identifying the historical existence of “a set of explicit and concrete practices of exchange of labour, of capital, and of consumption goods [...] in rice field cultivation, in house building, in irrigation, in road repairing, in village policing, and in religious ritual” (p.245). In a similar vein, Peter Kropotkin (1904) provides vivid

summaries of the existence of mutual aid among the *savages* and *barbarians* in his early work relating mutual aid to the topic of evolution. Henrich and Henrich (2007) likewise discuss the sharing of food in hunting and gathering societies as being “widespread and important” (p.38). Informal rotating savings groups have also long been popular as a means of facilitating and encouraging savings (see for example, Geertz, 1962). Anthropological accounts provide endless examples of such cooperation.

Informal cooperation also lives on today in various guises, perhaps most notably in the less economically developed countries. In recent years, cooperatives and self-help groups have gained in popularity, particularly in the areas of microfinance (UN, 1999, Resolution 53/197). Informal savings groups also remain popular, based on their efficiency and ease of use (Seibel, 2001). Informal cooperation has also been seen in areas undergoing serious reformation or rebuilding following natural disasters or acts of war. Scott-Cato (2010) for example notes a strong sense of informal cooperation among Haitians ravaged by the 2010 earthquake. Similarly, Edgar Parnell (2001) discusses the essential role of cooperative and self-help approaches in modern post-conflict situations.

Although informal cooperation continues to exist in modern contexts, in many cases, informal cooperation has given way to more formalized modes of organizing economic activities. One of the earliest examples of a formal cooperative is the Rochdale Pioneers, a group of weavers and craftspeople that registered and ran a cooperative shop beginning in 1844 (Birchall, 2003, p.5). The Rochdale Society is notable because it is the first cooperative to have some success at melding the conflicting aspects of business with the democratic ideals of cooperation, and its formalization paved the way for the establishment of legal authority for cooperatives in 1852 (Lambert 1968). From that point onwards, cooperatives began to enjoy considerable success as an organizational form, particularly in the industrializing western world, where, some argue, they developed as a reaction to the expansion of capitalism (Holmén, 1990, p.18). In agriculture, supply and marketing cooperatives became popular as a means of maximizing producer returns (Rhodes, 1983). Likewise, credit unions became popular as an antidote to rampant loan-sharking (Moody & Fite, 1971).

In the early 1900s, formal cooperatives also became popular in the socialist context, albeit mostly in the form of externally mandated collectives over which the government exercised considerable interference. In the Soviet Union, for example, collectives were forced upon farmers by the state during mass collectivization campaigns beginning in the late 1920s (Scott, 1998, p.208). Cooperatives were also popular in Yugoslavia, although in this case, workers often exhibited more control over production decisions (Ward, 1958, 566). Following the collapse of the command economy in the Soviet Union in the 1990s, many of the collectives that had been established by the state collapsed (Simmons & Birchall, 2008, p.2132). However, there were also instances where cooperatives transitioned successfully from state ownership to groups of independent farmers, for example in Russia, Moldova, the Ukraine, Bulgaria, Hungary, and Romania (Gardner & Lerman, 2006).

Lastly, cooperatives were also a popular form of organization in the context of colonialism. In many cases, cooperatives were established by colonial masters because they were seen as an intermediary organizational form, situated between the “traditional, subsistence-based economies of the pre-colonial societies and the modern market economies of the West” (Birchall, 2003, p.8). Cooperatives were therefore seen as a way to bridge the gaps that existed between production in the colonies and production in the native homes of the colonizers. As many colonies later went through processes of nationalization, the cooperative form often remained a popular form of organization, however, the success of these ventures varied. In addition, after the end of the cold war, withdrawn financial support from the ‘first world’ and the ensuing preference for structural adjustment policies left many cooperatives unable to sustain themselves (Simmons & Birchall, 2008).

2.2. Ideological Perspectives

From this historical context, it is clear that both formal and informal modes of cooperation have found a time and place in the lives of individuals seeking to improve their livelihoods. However, it is also clear that formal modes of cooperation became much more popular beginning in the early 1800s, and continue to be a dominant form of

cooperation today. This raises the question, what drove the increasing formalization of cooperatives?

In his work, *The Great Transformation*, Karl Polanyi (1944/2001) highlights the distinctions between early forms of economic systems and those that we see today. As he notes of early economic interactions, “custom and law, magic and religion cooperated in inducing the individual to comply with rules of behaviour which, eventually, ensured his functioning in the economic system” (p.57). Thus, early economic interactions, it can be argued, were quite informal in that the involved parties did not require formalized means of ensuring the compliance of their partner. Similarly, Douglass North (1991) discusses the changes that occurred as economic interactions began to extend beyond the bounds of villages and their pre-established norms of exchange. With this, he argues, there was necessarily a new demand for more explicit terms of exchange. It can be argued that this is one of the factors that drove the increasing formalization of all economic interactions. In the context of cooperatives, we can also regard this as one factor driving institutions towards a new level of formality. Thus, these viewpoints suggest that the formalization of cooperatives may have been driven by the changing dynamics of social life. As individuals were pushed out of close-knit village life by the dynamics of industrialization, they began to rely more on formal rather than informal institutions.

The viewpoints above also touch upon a greater ideological debate regarding what drives economic decision-making. Are individuals driven by social and cultural factors, or by explicit economic calculations and utility seeking? In the context of cooperation, it could be asked, do individuals cooperate because it is required by cultural norms? Or, rather, do they cooperate because it is the act that greatest maximizes their utility? On this topic, a great amount of debate has occurred, beginning with early debates between economists, on the one hand, and anthropologists on the other. As Wilk and Cliggett (2007) note, early debates were centred on the question of “whether Western economic tools can be used for the study of ‘primitive’ economies” (p.5). That is, when approaching the question of why individuals choose to make the economic decisions they do, is there more to consider than just the economic maximization of utility? Over time, two main sides to this debate emerged, with formalists on the one hand, and substantivists on the other.

From the perspective of formalists, individuals make economic decisions based largely on rational analysis and the aim of maximizing utility. Thus, they propose, decisions are made very much at the level of the individual. Importantly, many scholars propose that the notion of rational thought could be applied not only to decisions made in 'Western' market economies, but also in 'traditional' economies, where decision making appeared to be made on the basis of social and cultural norms, and where outcomes were not always viewed as economic (Schneider, 1975; Wilk & Cliggett, 2007). Thus, formalist thought provided a means of understanding decision making in rational terms. In other words, formalists "wanted to demystify non-Western economic behaviour to show that people really are rational" (Wilk & Cliggett, 2007, p.11). An example of a formalist approach can be seen in Scott's *Moral Economy of the Peasant*, where he applies concepts of economic utility maximization to understand peasant decision-making (Scott, 1977).

The idea of substantivism emerged with the aforementioned writings of Karl Polanyi in *The Great Transformation* (1944/2001). In this work, Polanyi bridged the gap between the economic and anthropological stances on economic decision-making, proposing, "man's economy is submerged in his social relationships" (p.48). Substantivists propose that formal economic models cannot be applied across cultures (Schneider, 1975), because "the economy is based on entirely different logical principles in different societies" (Wilk & Cliggett, 2007, p.8). Thus, individuals make decisions that are based in the context of their social structures, groups, and institutions (Wilk & Cliggett, 2007). Herein lies the value of the substantivist approach to understanding cooperatives. It provides a means of reconciling the economic and social aspects of cooperation by recognizing that economic decisions are based in cultural and social foundations rather than supposedly universally applicable economic theories.

The substantivist approach is particularly valuable for understanding the social dynamics of cooperation. As will be discussed in Section 3, cooperation should not be an ideal choice for a utility-maximizing individual; and yet, cooperation abounds in the real world. Part of the explanation lies in the influence of social and cultural phenomena such as reciprocity and retaliation.

2.3. Towards a Definition of Cooperatives

As discussed previously, cooperatives have been manifested in a variety of ways throughout history. Thus, the term 'cooperative' can be taken to describe many different types of organization, formal or informal, large or small. That said, over time the term has come to be used to describe a particular set of characteristics that distinguish a cooperative enterprise and a non-cooperative one. Not all organizations can be described as cooperatives; thus, it is useful to provide a more formalized definition.

The most widely accepted definition of cooperatives is provided by the Industrial Cooperative Alliance (ICA), and is based on the original principles of the early cooperators, the Rochdale Pioneers. They state, "a co-operative is an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise" (ICA, 2007). This definition appears quite prescriptive, however, in practice many organizations that claim to be cooperatives do not operate in strict accordance with these principles. It is therefore reasonable to interpret this definition as a normative view of cooperatives in an ideal state rather than a prescriptive requirement to which all cooperatives must adhere.

With this in mind I suggest the following key elements to distinguish between a cooperative and a non-cooperative. First, a cooperative is generally an autonomous and voluntary organization. Second, they may aspire to meet social, economic, and cultural needs. Third, they often exhibit characteristics of democratic control and shared ownership. Lastly, the most simple and elegant way of recognizing a cooperative lies in self-identification. If an organization claims to be a cooperative, it likely is.

2.3.1. Cooperative Forms

A final contextual consideration pertains to the distinction between cooperation that comes about as a result of voluntary and internally driven motives, and cooperation that is imposed on groups of people to meet the desires of external parties. Many forms of informal and formal cooperation can be said to conform more to the former categorization rather than the latter. However, throughout history there have also been

many examples of cooperation that has been imposed rather than voluntary. The most striking examples can be taken from the earlier discussion of cooperatives in colonial and socialist contexts. In these cases, the formation and operation of many cooperatives was very much out of the purview of the cooperators themselves. For example, John G Craig (1993) distinguishes between *directed cooperation*, in which individuals are directed to cooperate, and *contractual* forms of cooperation in which individuals agree to cooperate in a formal and voluntary manner towards the achievement of a common goal (p.14). Similarly, Patrick Develtere (1993) distinguishes between cooperatives that arise out of a social movement and those that are agents of external agencies.

3. Why do People Cooperate?

Having established context on the concept of cooperation, I now move on to explore the question of what motivates people to cooperate. To begin, I consider benefits that arise from performing economic activities at a larger scale. Next, I explore cooperation at the level of the individual, exploring cooperation from the perspective of rational choice and using the example of the prisoner's dilemma. Finally, I consider the concept of social capital and how the social capital arising from cooperation may provide further incentive to combine forces.

3.1. Benefits of Scale

In his discussion of the benefits of cooperation, Joseph Heath (2006) identifies three mechanisms through which a larger scale provides benefits to cooperation: economies of scale, gains from trade, and risk pooling.

By bringing together individual producers, cooperatives facilitate equipment sharing, joint marketing, and shared administrative costs, among other benefits. These resulting economies lead to lower per unit costs, and therefore, higher return to producers than they would enjoy as an individual (Rey & Tirole, 2007). Put another way, "if one individual is able to produce an output of x per unit of labour, an economy of scale is present when adding a comparable unit of labour from another individual increases output by more than x " (Heath, 2006, p.319). Economies of scale have been demonstrated to exist empirically in a sample of agricultural production and marketing cooperatives (Schroeder, 1992). In an examination of labour managed and private firms in Italy, Bartlett, Cable, Estrin, Jones, and Smith (1992) use empirical evidence to explore the effectiveness of cooperatives. They discover a number of benefits that can be attributed at least in part to the larger scale of the enterprise. For example, they find cooperatives enjoy stronger links to the local market, and place a strong focus on export

markets. They also find higher levels of productivity of both labour and capital. Economies of scale are especially important in the context of development because they allow small-scale producers to begin to compete with larger, non-cooperative enterprises. This is crucial if a cooperative hopes to enjoy long-term sustainability, and if they would like to reduce or eliminate reliance on outside support from governments and non-profit institutions.

An additional benefit of scale arises from the potential to realize gains from trade. In the context of cooperation, gains from trade refers to exploiting the differing abilities of individuals (Heath, 2006, p.321). In the same way that gains from trade arise from trading internationally, gains from trade can also be enjoyed through the trade of the abilities of individuals between themselves. If each individual has the option to focus only on those productive activities they are best at, the entire enterprise will gain.

Lastly, a larger scale provides increased security from a risk management perspective. Susceptibility to risk is a key issue for the individual producer. By joining a cooperative, individual producers may be able to share risks more widely, ensuring that they as individual producers do not bear the entire brunt of unlucky circumstances. This is especially pertinent in development contexts where poor producers often do not have access to institutional insurance services. Heath explains benefits of cooperation in the context of risk with reference to the law of large numbers. Any number of productive activities may have a risk associated with them. For example, an agricultural crop may fail, or an individual producer may fall ill or have their ability to work otherwise interrupted by unforeseen circumstances. The law of large numbers suggests that increasing the number of instances an activity is carried out will introduce statistical stability. That is, as increasing numbers of producers participate in a risk-pooling activity, the frequency of the unlucky event occurring will tend to converge with the probability, thus improving the predictability of the event occurring (Heath, 2006, p.322).

3.2. Individual Motivations

To begin this discussion on what motivates individuals to cooperate, I first explore arguments that would lead to suggest that individuals should not be driven to

cooperate at all. Indeed, the question of why people choose to cooperate with each other rather than selfishly attend to maximizing their own benefit has been the subject of significant academic inquiry. The core of this issue can be regarded as an expression of the age-old question about the nature of humans. Thomas Hobbes famously questioned the good intentions of humans with his observation on the life of man, and how it is “solitary, poor, nasty, brutish, and short” (1651/1976, p.86). Adam Smith also chimes in from an economic perspective, writing “It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest” (Smith, 1776, Book I, Chapter II).

From the perspective of evolutionary biology, humans should not be naturally cooperative. To summarize the argument, it is suggested that individuals with non-cooperative genes are more likely to experience benefits relative to those who cooperate, including a better diet, preferential access to mates, and better performance in combat. Owing to these benefits, it can be argued that non-cooperative individuals will be the most hardy, and therefore more likely to pass on their genes to future generations. Over time, this would lead to a proliferation of non-cooperative individuals. Henrich and Henrich (2007) summarize that “cooperation will generally be filtered out over time by natural selection and that cooperation ought to be rare, both in humans and throughout the rest of nature” (p.40). The assumption of self-interest is also the norm in economics. Fehr and Gächter (2000b), for example, proclaim the assumption of self-interest of individuals to be a long-standing economic tradition (p.159).

Out of this assumption that human beings are self-interested arises the paradox at the centre of the question of human cooperation. If human beings are primarily selfish, how is it that they choose to cooperate with each other on a voluntary basis? As Axelrod (1984) ponders, “In situations where each individual has an incentive to be selfish, how can cooperation ever develop?” (p.3)

Some of the most compelling arguments in support of human cooperation apply game theory and experiments to explore human motivation to cooperate. Particularly popular is the use of the prisoners’ dilemma, which can be applied both in real life experiments and computer simulations. The prisoners’ dilemma is a game used to show the potential outcomes that can arise based on how two players make decisions relative

to the other. The decision-making process occurs independently, such that the players do not know the answer of the other. In a prisoners' dilemma, it is assumed that self-interested individuals have an incentive to betray the other player in the hopes of realizing the greatest personal benefit. This incentive exists even though the greatest net benefit would be realized if both players cooperated. Possible outcomes of an example prisoners' dilemma are provided in Table 1.

Table 1: Prisoners' Dilemma

		Player 2	
		Cooperate	Defect
Player 1	Cooperate	3, 3 Reward for mutual cooperation	0, 5 Sucker's payoff, and temptation to defect
	Defect	5, 0 Temptation to defect, and sucker's payoff	1, 1 Punishment for mutual defection

Adapted from Axelrod 1984, p.8

As indicated in Table 1, if both players attempt to maximize their own benefit by defecting, the result is relative punishment for both players. If one player defects and the other cooperates, the defector is rewarded with the maximum possible benefit, and the cooperator is punished as the 'sucker'. The greatest net benefit is realized only through cooperation. However, because neither player knows the intention of the other, nor do they want to be the sucker, cooperation is not the expected outcome of a single round of the prisoners' dilemma. That is, fear of being the sucker is strong enough to discourage cooperation in a single round game.

To examine the dynamics of real world cooperation it is more realistic to consider situations where players are given the opportunity to interact with each other over multiple rounds. In this way, players are provided the opportunity to learn about the preferences and behaviours of their opponent over time. Players can then tailor their approach based on what they know about how the other has played the game in previous rounds. This is also known as an Iterative Prisoners' Dilemma (IPD).

An oft-cited early example of the use of an IPD to explore human cooperation was a computer-based tournament organized by Robert Axelrod (1984). For this tournament, game theorists were invited to submit computer-programmed strategies that would then compete against each other in a series of IPDs. Unlike in a single round game, players in an iterative game have the opportunity to revise their strategy based on the decisions made by their opponent in previous rounds, thus mimicking real-world qualities of cooperation.

A number of interesting findings regarding the nature of cooperation were discovered during this particular contest. Arguably, the most significant finding is the simplicity of the winning strategy, called Tit for Tat, which was submitted by Anatol Rapoport (Axelrod, 1984, p.31). Under this strategy, the program starts with a cooperative move, after which point it simply makes whichever move the other player has made previously. This leads the program to cooperate when the other player has cooperated, and to defect when the other has defected⁴. This approach exhibits a characteristic that Axelrod later dubbed as 'nice'. A nice strategy is one that will never be the first to defect in a game (1984, p.20).

The key outcome of Axelrod's games is the discovery that cooperation can be brought about under suitable conditions, even if the players are self-serving. Key to this finding is the notion of reciprocity, which is showcased in the success of the Tit for Tat strategy. Indeed, Axelrod (1984) suggests that reciprocal strategies can generate stable, long-term cooperation. Reciprocity implies that individuals will be more willing to cooperate with those who have cooperated with them in the past. Similarly, individuals will be less likely to cooperate with those who have previously acted unfairly. This reflex mirrors the instinctual Golden Rule, which directs us to, "do unto others as you would have them do unto you".

⁴ For further detail on the Tit for Tat strategy, including the conditions under which it is effective, please see Axelrod 1984.

In addition to direct reciprocity, that is, interactions that occur directly between individuals, we must also consider the potential for indirect reciprocity to foster instances of sustained cooperation. In this context, indirect reciprocity refers to the reputational effects that arise out of knowledge of a potential partner's history of behaviour (Henrich & Henrich, 2007, p.113). It has been shown that knowledge of the past behaviour of a potential partner can play a role in the decision to cooperate. This is a promising finding, as it implies that individuals need not interact directly with each other to enjoy reputational benefits. It also implies that if a certain individual has a reputation of not being cooperative, potential partners can use this as a warning and save themselves from becoming a potential sucker. This finding also highlights an important social dynamic of cooperation, that reputation is an important and tangible motivator of individuals. Thus, from the perspective of game theory, cooperation can be an outcome, even when individuals are assumed to be purely calculating and self-interested.

3.3. Social Capital

In the previous sections, it was established that cooperation can and does occur, even under the assumption of self-interest. Using game theory, scholars propose that reciprocity and reputation can be important contributors to ensuring the ongoing success of cooperation. Economic benefits of scale can also be an important driver of cooperation. An additional approach to exploring how self-interested individuals can be motivated to cooperate is based in the concept of social capital.

The concept of social capital is based in the idea that social connections can represent a source of tangible value for individuals and communities. The concept of social capital is not new; indeed, Harriss (2002) suggests the idea can be traced back to the philosophers of the Scottish Enlightenment and to early ethnographic accounts by anthropologist Keith Hart (p.3). Hanifan, an educator, also makes early reference to the concept of social capital, noting the existence of "that in life which tends to make these tangible substances count for most in the daily lives of people; Namely good will, fellowship, sympathy, and social intercourse among the individuals and families who make up a social unit" (1920, p.78).

The sociologist Pierre Bourdieu was one of the earliest to formally theorize this idea (Bourdieu, 1986; Harriss, 2002; Portes, 1998). He wrote that in addition to economic and cultural capital, capital can also present itself as social capital, “made up of social obligations (‘connections’), which is convertible, in certain conditions, into economic capital” (1986, p.47). Key to Bourdieu’s theory, as noted by Harriss (2002), is that he approached the concept with the view that “it is not enough to establish the existence of a network, it is also essential to examine its cultural/ideological content and context” (p.20). Thus, Bourdieu’s view of social capital relies on grounding in cultural theory.

Another early theorizer of social capital was the economist James Coleman. He approached the idea largely from the perspective of rational choice (Carroll & Stanfield, 2003); however, he also incorporated some aspects of sociology into his definition. For Coleman, social capital is regarded as somewhat of an enabling mechanism. As he writes, “If we begin with a theory of rational action, in which each actor has control over certain resources and interests in certain resources and events, then social capital constitutes a particular kind of resource available to an actor” (Coleman, 1988, p.598).

Although many definitions of social capital have been suggested, the definition provided by Putnam (1993) is suitable here. He suggests social capital “refers to features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions” (p.167). A key idea behind the concept of social capital is that it provides tangible value for productive activities, just as do other forms of capital.

In the context of cooperation, it can be argued that social capital provides additional incentives for individuals to initiate and sustain acts of cooperation. On this topic, Robert Putnam (1993) contributes some important considerations. A key benefit of social capital in the context of cooperation is that the existence of it can help strengthen voluntary cooperation without the need for punishment. As Putnam notes, “voluntary cooperation is easier in a community that has inherited a substantial stock of social capital, in the form of norms of reciprocity and networks of civil engagement” (1993, p.167). As an example, he goes on to describe rotating credit associations and how the asset of social capital can help sustain cooperation even when the incentives to defect

are high. Thus, even though no formal means of punishing defectors exists in these voluntary groups, repayment rates remain remarkably strong due to “strong norms” and “dense networks of reciprocal agreements” (Putnam, 1993, p.168).

4. Free-Riding

As established in Section 3, there are a variety of reasons why individuals may be incentivized to join forces and cooperate to realize mutual benefits. However, with the introduction of a larger scale comes the introduction of opportunities for individuals to free ride on the effort of others. This issue, as well as considerations on how the incentive to free ride can be countered, will be discussed here.

The free-riding problem is a widely discussed and widely considered issue; however, a precise definition of what it is remains elusive (McMillan 1979, 96). For the purpose of this discussion, however, I will approach the free-rider problem from the perspective of collective action. As Marwell and Ames (1979) note, “It may be called the ‘irrationality of voting’ in political science, the ‘free-rider’ problem in economics, and the ‘prisoners’ dilemma’ in psychology, but, under different guises, it appears that all the social sciences have discovered the problem of collective action” (p.1335).

The concept of free-riding is often attributed to Mancur Olson (1971) and his notion that “individuals would receive the benefits from group activity without bearing their proportional share of the costs” (Olsen & Cook, 2006, p.1). In the context of collective action, the free-rider problem is used to describe an incentive that arises when a group works towards the creation of a public good. A public good is one that can be enjoyed by everyone, irrespective of the level of effort they provide to procure it. The consumption of a public good by an individual also does not impede the consumption of that same good by others. Because they will be able to enjoy the good regardless of their effort, individuals have an incentive to ‘free-ride’ on the work of others. If many or all individuals decide to free ride, the benefit will be ruined for all. As summed up by McMillan (1975), free-riding refers to situations where “individually rational action leads to an outcome which is collectively irrational” (p.95).

If a group only contains one or two free-riders, the impact may not be noticeable or consequential. However, if too many individuals attempt to free ride, it can lead to a

downward spiral of defection and the loss of potential benefits for all⁵. This has parallels with the concept of the tragedy of the commons, whereby selfish behaviour can eventually lead to the loss of a resource for everyone.

4.1. How Can Free-Riding be Combated?

One key approach to combatting free-riding is through the use of incentives and punishments. The use of experiments based in game theory provides valuable insight into this approach. A popular method to examine the effectiveness of punishment to combat free-riding is through the use of the ultimatum game. The overall objective of this game is for two players to split a sum of money between them. One player is given the authority to propose an amount to offer the second player. The second player can choose to accept or reject the offer. If player two rejects the offer, neither player receives any money. If player two accepts the offer, both players keep the money as proposed.

An underlying premise of the ultimatum game is that a rational player should choose to accept any and all offers. This is because any sum of money should be better than no money at all. In reality, however, there is strong experimental evidence that the second player will often reject offers that they regard as unfair. Fehr and Fischbacher (2003), for example, note that in cases where the first player offers a share that is below 25% of the total value of the pot, the offer is rejected with high probability (p.785). Because a rejection of the offer results in both players going home empty handed, rejecting an offer can be interpreted as a way for the second player to punish the first player for uncooperative behaviour. This experiment indicates that individuals are willing to punish those who do not cooperate, even if it results in a personal loss.

In the context of cooperatives, we can apply a similar approach to explore how punishments can be used to encourage and maintain cooperative behaviour in an ongoing relationship. Fehr and Gächter (2000a) address this question in an experiment

⁵ See Fehr & Fischbacher 2003 for a detailed discussion.

that examines cooperation over multiple rounds in environments where punishments are both available and not available. They find that much higher rates of cooperation can be maintained in an environment where punishments are available over an environment where they are not available (p.980). In this study they also explore the willingness of individuals to punish defectors, even when the punishment is such that it hurts the defector as well as the punisher. Their results indicate that cooperators are not only willing to punish free-riders, but also that they are willing to do so even if “punishment is costly and does not provide any material benefits for the punisher” (2000a, p.980).

Fehr and Fischbacher (2003) also discuss this issue from the perspective of altruism. They suggest that an important contributor to ongoing cooperation is the existence of strong reciprocity. In their words, “strong reciprocity is a combination of altruistic rewarding, which is a predisposition to reward others for cooperative, norm-abiding behaviours, and altruistic punishment, which is a propensity to impose sanctions to others for norm violations” (p.785). Thus, an ideal cooperative environment will include individuals who are willing to both reward cooperation and punish bad behaviour, even when it is not in their own individual interest.

From these examples, we can see there is evidence that punishment can be a strong incentive for individuals to cooperate. However, in real life situations, there can be unexpected disadvantages that come about as a result of punishment. In her exploration of public action, Oliver (1982) makes the distinction between positive and negative incentives, arguing that the use of negative incentives may not always be appropriate. She notes that negative incentives, when levied against a member of the group, may result in that member attaching a negative value to assisting the group. This detracts the member from working towards the objectives of the group as a whole, and instead has them working against the group. As Oliver writes, “The use of punishment, or the threat of its use, disrupts the spirit of cooperation and coordination necessary for the collective action to succeed in its confrontation with the opposition” (1982, p.1370). She goes on to conclude, “They are not likely to respond to the punishment with feelings of solidarity for the group that punished them” (p.1370).

In situations where large groups of people are cooperating with each other, expectations can also play a strong role in determining to what extent each individual will

be willing to contribute to a public good. For example, individuals may be motivated to contribute more to the cooperative effort if there is the expectation that the other cooperative members will also contribute. However, there is also evidence that this effect is more likely to occur early on in a multi-round act of cooperation. Over time, if an individual's expectations about the contributions of their peers are not met, this can lead to deterioration of cooperation as former cooperators adjust their behaviour to match the norm (Fehr & Fischbacher, 2003, p.785).

There is also evidence that the incentive to free ride increases as the size of the group increases. In their exploration of the impact of group size on the incentive to free ride, Isaac and Walker (1988) present research which supports the notion that larger groups may encounter more problems with free-rider behaviour than small groups (p.197). Kim and Walker (1984) agree with this idea, and note that the size of the group can act against the incentive to free ride. Individuals are less likely to exhibit free-riding behaviour in small groups than they are in large groups. This is because there is the perception that in a smaller group the contribution of each individual will have a more noticeable impact on the end product. They note that this perception is influenced by both the altruistic tendencies of the individual and the perception that their individual contribution may directly influence the contributions of other group members in the future (1984, p.14).

5. Conclusion and Considerations

In the preceding sections, the focus has primarily been on the dynamics of cooperation at a general level. It was established that individuals may be driven to cooperate by both social and economic factors, and some consideration was given to free-riding and the implications that it can have for cooperation. To conclude, I consider dynamics of cooperatives in the context of international development.

5.1. Challenges of Developing Cooperatives

Cooperatives in developing contexts often face serious constraints in the formation and operation of viable businesses. Critically, it can be argued that these constraints necessitate the involvement of outside actors, who may be more able to address them. For example, Cracknell (1996) notes, “the often high level of poverty and illiteracy of their members and their geographical isolation (from markets, supplies, political decision-makers and technical innovations” (p.4) may justify continued support of cooperatives in developing environments.

Lack of access to the capital and financing required to fund a cooperative enterprise is a key constraint faced in developing contexts. Some cooperatives attempt to finance themselves completely using worker funding, which can place large constraints on the growth of the enterprise. Workers may be unwilling to invest completely in the enterprise, due to the risk of putting “all of their eggs in one basket” (Gunn, 1984, p.325). In a developing environment, it is also likely that individual members will not have access to funds to invest, whether it is from personal savings or access to credit. This can lead to a shortage of capital and impede the growth of the business.

Opening up to outside funding also presents considerable challenges. Outsiders may be less willing to invest in the enterprise because they may perceive it as a

relatively risky enterprise. That is, most investors are unlikely to have experience investing in cooperative firms, and thus may simply choose to not get involved.

Cooperatives are also a unique form of business, and thus require a unique complement of skills when compared to a non-cooperative enterprise. In the context of development, a lack of managerial expertise is especially pertinent. If cooperative members lack the necessary skills to manage the business, outsiders will need to be hired instead. This introduces new issues that arise when the manager of a cooperative is not also an owner (Dow, 2003; Ben-Ner, 1984). Ben-Ner (1984) argues that if a cooperative is opened up to outside labour there will be a tendency for the organization to lose its cooperative nature as the manager seeks opportunities for profit.

Lastly, a lack of access to markets is a crucial factor in the success of cooperatives, especially those in less developed countries. The most vulnerable poor, often women and those who are already economically disadvantaged, face a harder time accessing markets for their goods due to their social status. Cooperatives therefore often require additional assistance to set up supplier and vendor partnerships.

5.2. Final Considerations

In this essay, I have aimed to provide context around the dynamics of cooperation to foster an understanding of the factors of success for cooperatives in developing environments. Although this discussion has been largely theoretical, some key considerations for the success of cooperatives can nonetheless be suggested.

In many cases, cooperatives in areas of low development would benefit from outside assistance for the provision of key administrative services such as finance, market access, and general management. However, I argue that this assistance must be provided with great care. Potential donors, whether governmental or non-governmental, should seriously consider providing support only to cooperatives that have already been formed out of social beginnings, and that have already shown some success as a 'bootstrapped' enterprise. Harper and Roy (2000) summarize the value that can exist within a self-financed cooperative, noting

It may be better to withhold subsidy from groups when they are starting, in order to allow them the freedom to fail, which is a harsh but possibly necessary process of selection. As with new private businesses, it may be better to assist those which have passed the first critical test of survival without help; this is the best test of their ability to make effective use of subsidy (2000, p.138).

In their survey of successful cooperatives, Harper and Roy (2000) conclude that even though cooperative principles encourage participatory and inclusive decision making, strong individual leadership can also be quite important in the success of a cooperative. By identifying individual leaders and providing them with the support they need, this leadership can be harnessed more effectively to help catalyze the social development of cooperatives. It is important to note, however, that the selection of leaders must be made carefully, and special attention must be paid to ensure that the leader does not have close political ties. This introduces the potential for corruption and inappropriate manipulation of the cooperative by the external agent (Harper & Roy, 2000, p.119). In addition it is important to clarify what is meant here by the term 'leader'. In this context the term should not be taken to refer to a manager or someone that holds authority over decision making for the organization. Rather, a leader can be regarded as a community member with the ability to inspire and lead other community members, even in the absence of formal authority.

Additionally, the potential for peer mentoring between socially formed cooperatives should not be overlooked. By drawing upon the collective knowledge of those who have successfully formed cooperatives, aspiring cooperators can learn important lessons about success and failure from those who understand it best. This is in many ways superior to the advice that would be offered by those without first-hand experience forming a cooperative, which though well meaning, does not offer the same level of credibility.

Cooperation is a powerful activity. When people come together to work towards a mutual cause, the benefits are often greater than the sum of their parts. Cooperation, therefore, offers great potential benefits for the developing poor. This discussion of the dynamics of cooperation highlights how strong social and cultural ties, in the form of social capital, help aid in the success of the enterprise. Therefore, it would be wise for development practitioners and governments to consider this when approaching the question of how to best foster the formation of cooperative enterprises.

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