

## The importance of a just distribution in a ‘full’ world

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### Introduction

My aim in this chapter is to argue that distributional equity, which ought to be a mandatory objective at any time, becomes an even more important consideration in a ‘full’ world — that is, in a world where, as Daly (1996) has described it, human-made capital becomes the abundant factor and remaining natural capital becomes the limiting factor. To do this, I will focus on Daly’s notion of resolving a triple policy optima to achieve sustainable development (Daly, 1992).

Daly has strenuously argued that achieving sustainable development will require the resolution of three distinct policy goals — they being: (a) ecological sustainability (ensuring the rate of throughput is no greater than the ecosphere’s regenerative and waste assimilative capacities); (b) distributional equity (ensuring the distribution of income and wealth is fair and just); and (c) allocative efficiency (ensuring the incoming resource flow is allocated to product uses with the highest use value).

In addition, Daly has shown that two other aspects are critical to achieving sustainable development. In the first instance, and following Tinbergen (1952), the resolution of the three policy goals requires the application of a separate policy instrument. In other words, it is impossible to kill more than one policy bird with one policy stone. The policy instruments required are:

- *quantitative restrictions* on the rate of resource throughput to achieve ecological sustainability;
- *taxes and transfer payments* to achieve a just distribution of income and wealth;
- *relative prices* determined by supply and demand forces in competitive markets to achieve allocative efficiency.

In the second instance, it is important to address the three policy goals in the order presented above — namely, ecological sustainability first; distributional equity second; and allocative efficiency last. It makes no sense to try and resolve the allocation problem first and then make adjustments to ensure the incoming resource flow is both ecologically sustainable and distributionally just. Since the allocation process involves the relative division, through exchange, of the incoming resource flow among alternative product uses, it is too late to adjust the physical volume of the resource flow should it be unsustainable. In addition, since an individual’s command over the allocation of the incoming resource flow depends on his/her ability to pay for the means to need and want satisfaction, it is too late to adjust the distribution of the incoming resource flow among alternative people, following its allocation, should it be inequitable.<sup>1</sup>

Apart from this obvious sequencing imperative, resolving the policy goals in the above order extends market internalisation beyond the mainstream imposition of depletion/pollution taxes. This is because the suggested policy sequence internalises ecological and distributive limits, not just spillover costs. In doing so, it paves the way for markets to facilitate a macroeconomic adjustment towards an optimal scale, and by this I mean a scale that is not only sustainable and just, but one where economic welfare — the difference between the benefits and costs of economic activity — is maximised. Conversely, an ‘efficiency first’ strategy is unlikely to prevent an economy from growing beyond its optimal scale because

any increase in efficiency will give the appearance that the frugality required to achieve ecological sustainability is less necessary (Daly, 2007). Increased efficiency can also give the false impression that redistribution is less necessary given that greater efficiency implies the generation of more wealth from a given rate of resource throughput which most observers assume will automatically trickle down to the poor.

In bringing these three policy goals to attention, it is worth noting that mainstream economists have focused almost exclusively on efficient allocation — largely because of the falsely held assumption that allocative efficiency can achieve ecological sustainability — whereas ecological economists have focused mainly on sustainable scale. One might excuse ecological economists for this given the importance of sustainability and the fact that it is a poorly understood concept. Nevertheless, I believe that ecological economists must devote more time and effort to the issue of a just distribution at both the national and international levels.

Following a brief explanation as to why we should concern ourselves with distributional equity, I will then outline some of the policies that need to be implemented to achieve an intra- and internationally just distribution of income and wealth. Interestingly, many of these initiatives have been outlined in some form by Daly, thus making Daly one of the few ecological economists to have adequately dealt with the equity issue.

### **Why is a just distribution important?**

A just distribution of income and wealth is important for an obvious reason — society is morally obliged to ensure that each and every citizen has access to the basic necessities of life. Yet fairness goes much deeper than this since it is incumbent upon society to limit the order-of-magnitude difference in the income and wealth of its richest and poorest citizens. This aspect of equity has virtually been ignored, as evidenced by the massive increase in the order-of-magnitude difference between the pay of chief executives and average factory workers.<sup>2</sup> There are also few if any public campaigns to support the introduction of maximum income limits which would require the imposition of a 100% marginal tax rate on incomes beyond a certain income threshold. This is somewhat surprising given that, in my view, incomes beyond a certain level effectively amount to an economic rent and almost every undergraduate economics textbook portrays economic rents as unearned income that should be taxed away and redistributed.<sup>3</sup>

There is another good reason why an equitable distribution of income and wealth is important. It relates to the impact of a growing economy and the eventual need, at least in the minds of many ecological economists, for policy-makers to abandon the growth objective and initiate the transition towards a steady-state or non-growing economy.<sup>4</sup> The standard means of improving the well-being of a nation's citizens is to physically grow the economy. Ecological economists are happy to concede that the near continuous growth of industrialised economies since World War II has increased the material well-being of the average person in most industrialised nations. The doubt that ecological economists harbour is whether the increase in material possessions has always rendered the average citizen in these countries better off.

There are two reasons why ecological economists raise this doubt. The first pertains to a theoretical argument first expounded by Daly (1973). The second, which has emerged more recently, pertains to a growing weight of empirical evidence that appears to support Daly's theoretical argument. The theoretical argument itself is based upon a number of psychological, existential, and biophysical principles, and I do not wish to elaborate on these principles in this chapter.<sup>5</sup> In a nutshell, ecological economists believe that as the economy grows relative to the finite, non-growing ecosphere that supports it, the marginal benefits of growth gradually decline while the marginal costs of growth steadily increase. Eventually a

physical scale is reached where the marginal benefits and the marginal costs of growth equate. At this point, the economy arrives at its optimal scale, meaning that any further growth of the economy becomes ‘uneconomic’ insofar as it increases costs, usually of a social and environmental kind, more than it increases benefits, usually of an economic kind. Hence, growth beyond the optimum has the effect of lowering people’s well-being even though it may increase their possession of material goods.

To make matters worse, the optimal macroeconomic scale is likely to be reached much sooner than most people envisage. It is generally believed that if there is such a thing as an optimal scale, it will not be encountered until the economy arrives at its maximum sustainable scale (i.e., at its long-run carrying capacity).<sup>6</sup> However, it is because the cost of lost ecosystem services rises dramatically as an economy approaches its ecological limits — irrespective of whether they are reflected in markets — that an optimal scale is reached well before an economy arrives at its maximum sustainable scale. As a consequence, the former is likely to be a scale considerably smaller than the latter.

Of course, efficiency-increasing technological progress has the potential to increase the marginal benefits and lower the marginal costs of an increment of growth. This, in turn, can increase the physical size of both the optimal and the maximum sustainable scale of a nation’s economy (Lawn, 2007). The problem here, however, is that biophysical factors severely limit humankind’s capacity to reduce the marginal costs of growth. Biophysical factors also restrict how large an economic system can become before it is rendered unsustainable. But even if the technological potential exists to increase the size of the optimal scale, it is of little consolation if a nation’s economy is already much larger than the optimum. In such circumstances, a nation must reduce the physical scale of its economy in order to increase the economic welfare enjoyed by its citizens.

This last point leads me to the second reason why ecological economists doubt whether the more recent growth experienced in industrialised nations has translated into an increase in human well-being. In the late-1980s, an Index of Sustainable Economic Welfare (ISEW) was developed by Daly and Cobb (1989) based on an earlier welfare index calculated for the USA by Nordhaus and Tobin (1972). The ISEW, which is now more commonly referred to as a Genuine Progress Indicator (GPI), is designed to measure and compare the benefits and costs of a growing economy. The GPI is therefore an ideal indicator of where a nation’s economy is in relation to its optimal scale (Lawn and Sanders, 1999; Lawn 2007). Presumably, if the GPI is rising, this indicates that a nation’s economy is smaller than the optimum and that whatever growth is occurring is ‘economic’. Conversely, if the GPI is declining, this suggests that the optimal scale has been surpassed and that the growth of the economy is ‘uneconomic’.

In virtually every instance where the GPI has been calculated for an industrialised nation, the GPI, after rising in unison with GDP, has either declined or stagnated (Max-Neef, 1995; Jackson and Stymne, 1996). Because the general downturn in the GPI occurred during the 1970s for some countries (e.g., USA, UK, and Australia), or the 1980s for others (e.g., Sweden and The Netherlands), most industrialised nations appear to have long surpassed their optimal scale. As such, the well-being of many people in the industrialised world has probably been declining or stagnating for some time.

What is even more alarming is that the economies of many industrialised nations also appear to have exceeded their maximum sustainable scale. Studies based on a comparison between a nation’s ecological footprint<sup>7</sup> and available biocapacity reveal that most of the world’s industrialised countries have an ecological deficit (Wackernagel and Rees, 1996; Wackernagel et al., 1999).<sup>8</sup> Thus, more than having to reduce the physical scale of their economies to increase economic welfare (i.e., move towards an optimal scale), industrialised nations need to undergo a phase of de-growth to again operate sustainably.<sup>9</sup>

Given what appears to be an urgent need to reduce the physical scale of the economy, it is clear that industrialised countries will be unable to rely upon growth as a means of improving the material well-being of their poorest citizens. They will have to rely heavily on the redistribution of income and wealth. Increased efficiency — in particular, value-adding in production — will also be of assistance, but greater efficiency cannot be acquired at will. Moreover, as already highlighted, technical efficiency is subject to severe biophysical constraints.<sup>10</sup>

Another important equity consideration arises if a society or nation elects to make the transition towards a steady-state economy and the transition requires a phase of de-growth. In these circumstances, distributional equity will be critical to minimise whatever pain may ensue. For example, innovative policies will need to be devised to keep unemployment and absolute poverty levels low as the economy diminishes in size. If this cannot be achieved, society may regard the resultant rise in poverty and unemployment too repugnant to accept, in which case it may reject the transition to a steady-state economy and revert to a growth objective. I will have more to say about the policies to prevent escalating unemployment and poverty levels soon.

The final issue I want to raise relates to some disturbing new evidence regarding the sustainable economic welfare of a number of poor nations. I mentioned above that the GPI of wealthy nations has either fallen or stagnated since the 1970s-80s. Somewhat remarkably, the GPI of the majority of these countries ceased to rise once their per capita GDP reached approximately Int\$15,000-20,000.<sup>11</sup> This led Max-Neef (1995) to put forward a threshold hypothesis — the notion that when a nation's per capita GDP reaches a certain level, its GPI is likely to fall. As unwelcome as this news was to growth-obsessed rich countries, it was good news for poor nations. With per capita GDP far short of the income threshold, poor countries could grow their economies safe in the knowledge that, for some time at least, it would translate into rising levels of sustainable economic welfare.

Alas, this does not seem to be the case. A book has recently been released revealing the results of a GPI study of seven nations in the Asia-Pacific region (Lawn and Clarke, 2008). Three of the nations are high-income countries — Australia, New Zealand, and Japan; four are low-income countries — China, India, Thailand, and Vietnam. Of the four low-income countries, two of them, China and Thailand, are already experiencing a decline in their per capita GPI. This is despite their per capita GDP being well short of the income threshold.<sup>12</sup> As for India and Vietnam, the per capita GPI of both countries is still rising but at a considerably lower rate than their per capita GDP. Moreover, because environmental costs in India and Vietnam are increasing significantly and likely to rise strongly in the near future, the per capita GPI of these two nations is liable to fall very soon.

What are the reasons for this apparent contraction in the threshold level of GDP? There are many, but the main factor appears to be the much higher marginal cost of growth in a full world. If one considers the initial growth phase of the world's richest countries, it took place in a relatively empty world. Resources were plentiful and easy to access. Competition for resources in global resource markets was comparatively weak. In addition, waste sinks were relatively uncommitted and therefore readily able to absorb and assimilate much of the waste that was generated. Hence, the marginal cost of growth was quite low for the early growth-movers.

A completely different situation exists today. Oil is now sourced from distant deserts and deep ocean waters. China and India are now actively competing with Europe and North America for base commodities. Meanwhile, the global ecosphere struggles to cope with the growing discharge of CO<sub>2</sub> into the atmosphere. As a consequence, the marginal cost of growth is considerably higher for growth late-comers than it was for the world's richest nations at the equivalent stage of development.

What does this mean? Firstly, unless appropriate action is taken, low-income countries may never reach the level of well-being currently enjoyed by the world's industrialised nations. Secondly, rich nations not only need to quell their growth to increase their own levels of economic welfare, they must, from an equity perspective, cease to grow their economies in order to provide the 'room' that the low-income countries need to enjoy a phase of welfare-increasing growth (Lawn and Clarke, 2008). Should rich nations do this, it would amount to an indirect form of redistribution, although, as we shall see, much more needs to be done than this on the redistribution front.

### **Policies to achieve a just distribution**

Given the aforementioned, it is quite clear that policies need to be implemented to achieve distributional equity both within and between nations. Equity between nations will be the more difficult to accomplish since it will require the relative equalisation of wages, conditions of employment, and environmental standards in an upwards direction across the world (i.e., will require the conditions in the South to gravitate towards those of the North). Efforts to pull standards and conditions upward are important for obvious poverty-alleviation reasons. They are also important given that the forces of globalisation have a tendency to exert downward pressure on standards — a so-called race to the bottom — and therefore must be adequately dealt with to achieve a genuine and desirable form of distributional equity.

### ***Policies to achieve distributional equity within nations***

So as long as disparities exist between countries in terms of their material wealth and productive capacity, the policies to achieve distributional equity within nations will differ from country to country. In low-income countries, where the capacity to meet the needs of the poor is limited, achieving distributional equity is likely to be confined to ensuring that each person has access to the basic necessities of life. Conversely, in high-income countries, achieving distributional equity is likely to extend to the poor having access to some luxury goods and services. Considerations of a just disparity between rich and poor are also apt to arise in high-income countries.

Putting aside the issue of how large a minimum income should be, a number of different methods have been recommended to guarantee its provision. Some observers have proposed a Basic Income Guarantee which effectively amounts to a universal transfer payment to each and every citizen regardless of one's contribution to society (Baetz, 1972; Atkinson, 1995; Clark and Kavanagh, 1996; Van Parijs, 2004). Others have argued for something similar but in the form of a negative income tax (Friedman, 1962; Tobin, 1966; Daly, 1991).

Because of concerns about the macroeconomic impact of a Basic Income Guarantee, a group of economists have recently put forward the concept of a Job Guarantee (Wray, 1998; Mitchell and Watts, 2004; Cowling et al., 2006; Tcherneva, 2006). The Job Guarantee is a demand-side policy where the government acts as an employer-of-last-resort to absorb all workers displaced by the private sector (Mitchell as Watts, 2004). Under a Job Guarantee, any person unable to secure employment in the private sector or conventional public sector is automatically offered a Job Guarantee occupation.

An important feature of the scheme is the payment of a minimum hourly award wage to satisfy the basic needs of full-time Job Guarantee employees and their dependents. The payment of a minimum wage also means that the government avoids having to compete with the private sector up the wage scale for labour. This ensures there is no disturbance of the private wage structure. As an added bonus, the minimum wage set by the government establishes a price-stabilising wage floor for the entire economy (Mitchell and Muysken, 2008).

Advocates of the Job Guarantee believe that a number of factors make it the best means of providing a minimum income. Firstly, because the Job Guarantee ties the receipt of income to work, it overcomes any concern that may arise in relation to worker incentives and welfare dependency. Secondly, advocates of the Job Guarantee argue that a Basic Income Guarantee amounts to an indiscriminate form of Keynesian pump-priming that, if introduced, would trigger periodic phases of demand-pull and cost-push inflation. Because the inflationary spiral would then have to be countered by a contractionary macroeconomic response, Job Guarantee advocates believe that a Basic Income Guarantee would generate high rates of unemployment (Cowling et al., 2006). Conversely, a Job Guarantee would head off any inflationary pressure in two main ways. In the first instance, it would provide the demand expansion necessary to achieve full employment — no more, no less. Hence, it would not be indiscriminate in nature. In the second instance, it would employ the same inflation-control mechanism as the ‘non-accelerating-inflation rate of unemployment’ (NAIRU) approach that is widely adopted by most national governments. The NAIRU is an unemployment rate that, when achieved, is accompanied by a constant inflation rate. An increase in real GDP that reduces the unemployment rate below the NAIRU leads to non-productivity-related wage rises and an accelerated rate of price inflation (Dornbusch and Fischer, 1990). It is because of widespread concerns about inflation that contractionary macroeconomic measures are commonly implemented whenever the unemployment rate falls to something approximating the NAIRU. The unfortunate consequence of a NAIRU-based approach to macroeconomic policy is plain for all to see — it has resulted in a permanent pool of sacrificed labour, the majority of which are society’s most vulnerable and disadvantaged citizens.<sup>13</sup>

The inflation-control mechanism associated with the Job Guarantee is referred to by Mitchell and Watts (2004) as a ‘non-accelerating inflation buffer employment ratio’ or NAIBER. It works in the following manner. Firstly, assume that a NAIRU policy is being employed and exists at a 6% unemployment rate.<sup>14</sup> The Job Guarantee scheme is introduced to eliminate all but frictional unemployment. Because the scheme necessitates an increase in government spending, it boosts aggregate demand and real GDP. Let’s assume that demand-pull inflationary pressures begin to emerge within the economy. Fearing the impact of inflation, the government dampens private sector activity by employing monetary policy instruments to raise interest rates.<sup>15</sup> As a consequence, the percentage of the labour force employed in the private sector declines while the percentage employed at the minimum wage under the Job Guarantee scheme increases. Provided the interest rate is appropriately manipulated, the ratio of Job Guarantee workers to private sector employees rises until the inflation rate is again stabilised. Inflation control and full employment are simultaneously accomplished and the NAIBER is attained.

Of course, advocates of the Basic Income Guarantee are likely to respond by contending that full employment is unnecessary if each citizen is guaranteed a minimum income upfront. They may even go further and argue that any high rate of unemployment arising from the introduction of a Basic Income Guarantee is also irrelevant. However, evidence suggests that unemployment, by eroding human capital and reducing one’s capacity to engage in a market economy, significantly impedes one’s ability to realise their full spectrum of human needs; in particular, the need to become fully actualised in what one is capable of becoming (Maslow, 1954). It has therefore been argued that a guaranteed access to paid employment constitutes a basic human right which can only be upheld if a full employment policy is adopted (Burgess and Mitchell, 1998). I wholeheartedly support this view and believe that ecological economists must give employment considerations greater attention than they have in the past. A Job Guarantee is a policy initiative well worth investigating.

Having said this, there is a concern that I have recently raised in relation to the Job Guarantee (Lawn, 2009). Let’s assume that a nation is situated on an ecological precipice and

there are no constraints imposed on the rate of resource throughput to keep it within the regenerative and waste assimilative limits of the ecosphere. If a Job Guarantee is introduced to eliminate unemployment, it would initially increase real GDP and tip a nation's economy into unsustainable territory. At first blush, it would seem that the Job Guarantee is inconsistent with achieving ecological sustainability. But this may not be the case. Assume, instead, that throughput constraints have been imposed and exist in the form of a comprehensive cap-and-trade system.<sup>16</sup> Should a Job Guarantee be introduced, the ensuing demand stimulus would not translate into a higher yet unsustainable level of real GDP. It would lead to an increase in the price of resource permits — a consequence of a rise in the demand for resources relative to a constrained resource supply. This would raise the cost of production, increase goods prices, lower the real money supply ( $M/P$ ), and push up interest rates. The rise in interest rates would deflate private sector spending and reduce private sector employment. With a Job Guarantee in place, the workers laid off in the private sector would obtain Job Guarantee occupations. Thus, even in circumstances where ecological limits render the stimulation of aggregate demand untenable, the Job Guarantee would be able to ration paid work to the extent required to achieve and maintain full employment (Lawn, 2009). Hence, the Job Guarantee would serve as an invaluable distributional device in a full world.

Some observers would no doubt object to the idea of a portion of the labour force being 'forced' out of the private sector and into a lower-paid Job Guarantee occupation (i.e., the NAIBER would initially be higher than the NAIRU). I have to admit that this is a potentially undesirable aspect of the Job Guarantee. However, consider the following. Firstly, having some people employed on a lower income is more equitable than having a great deal more people permanently unemployed under a NAIRU policy stance. Secondly, the higher resource costs induced by a cap-and-trade system would presumably: (a) stimulate the development and uptake of resource-saving technology; and (b) facilitate the allocation of the incoming resource flow to higher value-adding forms of production. In other words, higher resource costs would increase labour productivity over time. I believe this would result in the NAIBER being considerably lower than the NAIRU in the long-run, which is an undeniably better outcome on all fronts.

The final point I would like to make relates to population growth. Clearly, in view of the ecological limits to growth, population numbers must eventually be stabilised along with the stock of human-made goods. However, it is also important to control population growth given that distributional equity is made exceedingly more difficult to achieve if population numbers are rapidly rising. There are, of course, many countries with low fertility and immigration rates. For these countries, population growth control is not a critical domestic concern. But for those nations with high fertility rates (usually low-income countries) and others with high immigration rates (e.g., the USA, Canada, and Australia), population issues need to be taken more seriously than they are at present.

### ***Policies to achieve distributional equity between nations***

As previously indicated, one of the best distributive actions that Northern countries can take is to cease expanding their economies to enable the South to enjoy a phase of welfare-increasing growth. Beyond this, high-income countries should increase the financial aid they provide to the world's low-income countries. At present, average spending on foreign aid per wealthy nation is 0.3% of GDP (OECD Development Statistics Online). This is woefully inadequate. A target foreign aid rate of at least 0.7% of GDP would be eminently more just.<sup>17</sup>

There are four main areas where increased aid money should be directed to reduce the current inequity between nations. Firstly, in view of the need for many poorer nations to

control their population numbers, aid money should be used to fund population stabilisation programmes in circumstances where governments lack the necessary fiscal capacity.

Secondly, many of world's critical ecosystems (e.g., rainforests, wetlands, and coral reefs) are located in low-income nations where further GDP growth is required. These ecosystems will come under intense pressure at a time when preservation is more urgent than ever. While the preservation of ecosystems generates non-direct use benefits for all nations, it denies the host country direct use benefits. To promote ecosystem preservation, the governments of wealthier nations should distribute aid money to compensate low-income countries for the direct use benefits they would subsequently forego. The aid money could then be redistributed by the recipient country to the citizens most affected by the lack of direct ecosystem access. This could take the form of direct compensation or the establishment of a substitute industry (e.g., tourism to replace logging).

Thirdly, aid money should be used to assist low-income countries to increase their investment in natural capital — that is, by funding reforestation projects, wetland restoration and rehabilitation programmes, and assisting farmers to adopt sustainable land management practices.

Finally, since rich countries would indirectly benefit from a reduction in the resource use intensity of the world's low-income nations, the former should establish a transfer programme to assist the latter in the uptake of resource-saving technology. This might best be achieved by allocating foreign aid money to subsidise and thus lower the purchasing price of expensive new technology.

I mentioned earlier that globalisation forces have a tendency to exert downward pressure on standards that will need to be addressed to achieve a desirable form of distributional equity. The downward pressure on standards arises because, in a globalised economy characterised by the free mobility of capital, international trade is governed the principle of *absolute advantage* (i.e., the absolute cost of production).<sup>18</sup> In these circumstances, capital is free to move wherever the cost of production is lowest, whether it be the result of employing better trained and educated workers, the use of more advanced technology, lower wages and tax rates, or lower compliance costs due to weaker environmental and workplace regulations. Unfortunately, as the cost of relocation has fallen over time, it is the disparity in tax rates, wages, and environmental and workplace standards that is affecting the cost of production most. It is therefore these factors which are having the greatest influence on where transnational corporations locate their production activities.

Fearing the loss of industries and jobs to other countries, governments will often try to minimise the relocation impact of high wages, corporate taxes, and environmental and workplace regulations. As a consequence, globalisation forces make it difficult for governments to introduce the policies needed to achieve sustainable development, including those which improve the equitable distribution of income and wealth both within and between nations.

How can this problem be ameliorated without unduly affecting international trade? One potential solution is to allow countries with similar wages, tax regimes, and environmental standards to trade freely with each other yet impose 'green' tariffs on countries with lower standards. To work effectively, the tariff would need to represent the undesirable cost advantage that exists due to differences in standards, not because of a genuine difference in the efficiency of production.<sup>19</sup> Since there is enormous potential for a system of green tariffs to be abused, which could easily trigger a degenerative tariff war, the system would need to be overseen by an international organisation. The World Trade Organisation (WTO) would seem a likely candidate although this would require the WTO to revamp its current attitude towards international trade matters.

In many ways, the WTO ought not to be antagonistic towards green tariffs. Much of the WTO's rhetoric on international trade centres on its potential efficiency benefits. Yet international trade in the presence of externalised social and environmental differentials would appear to be resulting in a grossly inefficient allocation of global resources. Quite understandably, antagonism is very likely to come from those who would view a system of green tariffs as a means by which Northern countries could maintain its wealth advantage over the world's poorest countries. There is no doubt that the system would make it more difficult for many low-income nations to export to the North. However, this extra difficulty may not be such a bad thing. Indeed, it may help to close the gap between rich and poor. Consider the following response by Daly when asked about the possible implications of internalising social and environmental standards into the prices of Third World goods:

*Granted this makes it harder for poor countries to export — so does a decent minimum wage and the existence of free labour unions and the outlawing of child labour within the poor country. In my view it is not all bad to make it harder for poor countries to export to the US. It means that instead of planting all their land in bananas or fancy fruits and flowers for export, the poor country might have to plant more rice and beans for its own citizens. And to sell the rice and beans to its own citizens, it will have to worry about their purchasing power — about domestic jobs and decent wages, and the distribution of income within their country. And they might worry a bit less about cutting wages and social benefits in order to be more competitive in the global market, as they must do in the export-led model of development to which the IMF and WTO are so totally committed. Admittedly, less export revenue will be available to buy expensive toys for the elite, but even that might not be all that bad. Maybe they will begin to invest some of their surplus in their own country.* (<http://csf.colorado.edu/seminars/daly97/proceedings>)<sup>20</sup>

In other words, by provoking the world's low-income nations to consider more seriously the income of its poorest citizens, a system of green tariffs would force its policy-makers to implement the measures that would improve the equitable distribution of income and wealth. Furthermore, the ability to better compete in the global market would require low-income countries to become genuinely more efficient in production, not to become increasingly attractive pollution and/or cheap labour havens. This would help close the productivity gap between the world's rich and poor countries and eventually bridge the income disparities across the globe.

Another potential globalisation solution involves limiting the international mobility of capital to reinstate *comparative advantage* as the principle governing international trade. This would also circumvent any cost advantage associated with lower social and environmental standards, although it probably would not encourage the raising of standards to the same extent as green tariffs. I have elsewhere outlined a so-called IMPEX system of exchange rate management to limit the international mobility of capital (Lawn, 2007). Word limits prevent me from detailing the IMPEX system. What I can say is that the IMPEX system is not anti-trade, it is largely market-based, and it precludes the growth of foreign debts that have also played a crucial role in reducing the capacity of many low-income nations to protect their poorest citizens.

### **Concluding remarks**

Sustainable development not only requires resolution of the three policy goals of ecological sustainability, distributional equity, and allocative efficiency, but for each goal to be addressed in the correct order and via the application of an appropriate policy instrument. Although most ecological economists hold this view, very few have dealt adequately with the equity goal. Many have chosen to focus on what is required to achieve ecological sustainability. As important as ecological sustainability is, particularly given that many

countries have surpassed their maximum sustainable scale, this is a mistake. Ecological economists urgently need to demonstrate that the steady-state economy they have heavily promoted need not lead to increased poverty rates or demoralisingly high rates of unemployment. This will require powerful and well-reasoned arguments as to how, in a full world, distributional equity can be achieved both within and between nations. Should ecological economists and other like-minded activists fail in this regard, humankind is much less likely to make the necessary transition to a steady-state economy. But even if the transition to a steady-state economy is undertaken, the failure to achieve distributional equity — perhaps as a consequence of underestimating its importance — increases the probability that society will return to the growth objective. Given the gravity of the current situation, humankind can ill-afford the eventuation of either circumstance.

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## Endnotes

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<sup>1</sup> Of course, ensuring a just distribution prior to the allocation process does not guarantee a just distribution following it. Hence, there is always the need for some further redistribution. But redistribution, following allocation, is much less disruptive and market distorting if the distribution of the incoming resource flow is equitable to begin with. Above all, the policy goals of ecological sustainability and distributional equity must be resolved prior to the goal of allocative efficiency.

<sup>2</sup> Daly (1996) reveals that, in the USA, the order-of-magnitude difference between the pay of chief executives and average factory workers grew from a factor-of-twelve in 1960 to a factor of well over one hundred by the 1990s. This difference has continued to increase.

<sup>3</sup> Upon airing this suggestion, I am usually asked what the maximum income should be. For some time, I replied with a stab-in-the-dark figure that, with all honesty, I could not rigorously justify. Having given this more thought, it would seem reasonable to me that a good starting point is the annual salary of a nation's President, Chancellor, or Prime Minister. After all, no-one has greater responsibility. From my Australian perspective, this would mean an order-of-magnitude difference in the income of the richest and poorest of around fifteen to twenty times (the PM's salary is approximately \$350,000 per year; the average income in Australia is approximately \$50,000 per year; and the income of Australia's poorest — old-aged pensioners with no other source of income — is approximately \$20,000 per year).

<sup>4</sup> A steady-state economy is one that does not physically grow (i.e., production of new goods equals the consumption/depreciation of existing goods), but qualitatively improves in terms of its content of physical goods, the means by which goods are produced and maintained, and the purpose for which the goods are intended. For more on the steady-state economy, see Daly (1973, 1991) and Lawn (2007).

<sup>5</sup> For more on this, see Daly (1973, 1991, 1996), Mishan (1967, 1980), Georgescu-Roegen (1971), Weisskopf (1971, 1973), Hirsch (1976), Lawn (2000, 2007), and Mill (1857).

<sup>6</sup> It is not uncommon for the two terms to be confused and thus be used interchangeably.

<sup>7</sup> A country's ecological footprint constitutes the area of land *required* to generate the renewable resources needed to sustain economic activity at its current level and to absorb the resultant wastes. The emphasis on renewable resources in the calculation of the ecological footprint arises because of the inevitable exhaustion of non-renewable resources. To determine if a nation's economy has exceeded its maximum sustainable scale, the ecological footprint is compared to its biocapacity. A nation's biocapacity is indicated by the quantity of land it has *available* to generate an ongoing supply of renewable resources and to absorb its own wastes. Ecological unsustainability (ecological deficit) occurs if a nation's ecological footprint exceeds its biocapacity.

<sup>8</sup> It is claimed that countries with ecological deficits can operate sustainably by importing resources from countries with ecological surpluses. This is true. However, two points are worth bearing in mind. Firstly, the ecological footprint of the global economy currently exceeds the biocapacity of the planet (Wackernagel et al., 1999). That is, the global economy is already in ecological deficit. Therefore, while the ecological deficits of some countries can be 'resource balanced', not all can. Secondly, because the economies of many surplus nations are growing, so too are their ecological footprints. This means that ecological surpluses are declining across the world. Even if a debtor country is able to balance its ecological deficit via an arrangement with a surplus nation, can it rely upon this arrangement to maintain sustainability if the latter's surplus is shrinking over time and its own deficit is expanding?

<sup>9</sup> De-growth is a deliberate yet measured decrease in the physical scale of the economy. It is not the same as a failing growth economy (recession) insofar as it involves the implementation of specific policy measures designed to reduce the scale of any economy in an orderly and least-painful manner. De-growth is a relatively novel concept that was recently explored at a conference organised by the European Society for Ecological Economics (see [www.ecoeco.org/esee/degrowth](http://www.ecoeco.org/esee/degrowth) conference).

<sup>10</sup> For example, the first and second laws of thermodynamics dictate that the matter-energy embodied in physical goods ( $Q$ ) must be something less than the matter-energy embodied in the resources used in their production ( $R$ ). That is, technical efficiency ( $E$ ), which equals  $Q/R$ , must be less than a value of one. Hence, production can never be 100% efficient. The first and second laws of thermodynamics also preclude the 100% recycling of matter and the recycling of energy altogether.

<sup>11</sup> Based on 2004 prices and exchange rates.

<sup>12</sup> The per capita GPI of China and Thailand peaked when their per capita GDP was Int\$5,000 and Int\$7,500 respectively.

<sup>13</sup> There are claims that, in more recent times, the NAIRU has fallen to levels that equate to full employment. The Centre of Full Employment and Equity (CofFEE) at the University of Newcastle, Australia, have shown that when underemployment and labour underutilisation are taken into account, the real unemployment rate is approximately twice the official rate. In Australia, at a time when the Federal Government was claiming to have achieved full employment at an official unemployment rate of around 4% of the labour force (late 2007/early 2008), CofFEE (CLMI, various) estimated that close to 8% of the labour force was either unemployed or

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underemployed. It was also estimated that 70% of underemployed Australians were working at least ten hours fewer than the desired number of work hours. In addition, around 1% of the labour force had been unemployed for at least one year.

<sup>14</sup> The NAIRU is typically around 6 percent of the labour force in most industrialised countries.

<sup>15</sup> In actual fact, the use of monetary instruments in most countries is conducted by central banks acting independently of the central government. Having said this, central banks invariably perform their monetary policy role with the aim of achieving a desired inflationary target band that is legislatively inscribed in the central bank's charter by the central government. Hence, as much as monetary policy is conducted by central banks, it is merely undertaken by central banks on the behalf of central governments.

<sup>16</sup> For more on cap-and-trade systems, see Lawn (2007, Chapter 11; Daly, 2007).

<sup>17</sup> 0.7% of GDP was the figure agreed to by wealthy donor countries at the UN General Assembly in 1970.

<sup>18</sup> In the more traditional model of international trade (Ricardo, 1817), the governing principle is that of 'comparative advantage', which is determined by the relative cost of production. When international trade is governed by this principle, trade will generally be mutually beneficial for those engaged in the international transaction. However, for international trade to be governed by this principle, capital must be immobile, which it no longer is. Thus, the traditional argument in support of the mutually beneficial gains from international trade no longer hold.

<sup>19</sup> Green tariffs would be protectionist in the sense they would protect hard-won social and environmental standards. But they would not be protectionist in the sense of protecting genuinely inefficient industries. If, following the internalisation of lower social and environmental standards, the price of a Third World good is less than it is in a high-income country, the green tariff would not prevent the industry in the high-income country from being competed out of existence.

<sup>20</sup> Taken from an internet seminar that followed the release of Daly's book, *Beyond Growth* (1996).