

8. Policy implications of the Index of Sustainable Economic Welfare: Thailand as a case study

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INTRODUCTION

Thailand has been one of the world's most successful economies over the past three decades. The constant high rates of growth it has achieved have been central in reducing poverty levels (measured in terms of income levels) from nearly one-third of the population in 1975 to less than 10 per cent in 1999 (Warr, 2001). However, in addition to the benefits of economic growth, such as reduced poverty, there are associated costs that can reduce social welfare. Such costs include various forms of pollution, environmental degradation and social instability.

An increasing number of studies reveal that, beyond a certain point, the positive welfare contribution of economic growth can cease to exist and eventually lead to its diminution – a consequence of the hidden and traditionally unreported costs of economic growth (Daly and Cobb, 1990; Diefenbacher, 1994; Hamilton, 1998; Jackson and Marks, 1994; Lawn and Sanders, 1999; Rosenberg and Oegema, 1995; Stockhammer et al., 1997). These studies involve the estimation of a new measure of welfare commonly referred to as an Index of Sustainable Economic Welfare (ISEW). The ISEW is an attempt at calculating the relevant benefits and costs of growth – namely, economic, social, political, environmental and spiritual benefits and costs – to ascertain a more accurate measure of the sustainable economic welfare associated with a nation's economic activity. The ISEW is being widely accepted as a useful indicator of sustainable development at the national level.

This chapter estimates an ISEW for Thailand over a 25-year period, 1975–99. As Thailand is often presented as a model for other developing countries to imitate, it is a worthwhile country to review (Watkins, 1998). Indeed, it should be of interest to development planners to apply this new approach to measuring welfare to developing countries to investigate

whether it is possible for low-income countries prematurely to reach the point at which economic growth no longer increases economic welfare but, instead, reduces it. Moreover, development planners can utilise the ISEW to ascertain which social and economic development policies have been detrimental to economic welfare and those that are likely to boost economic welfare in future years.

This chapter concludes that Thailand, which is a low-middle income country, is approaching the point at which economic growth produces both diminishing and, at times, negative welfare returns as the costs of achieving growth begin to outweigh the associated benefits. This conclusion is significant for policy makers and highlights the importance of considering development prescriptions that offer alternatives to the current orthodoxy of giving primacy to achieving economic growth.

THAILAND'S INDEX FOR SUSTAINABLE ECONOMIC WELFARE

The findings of previous ISEW studies are summarised in Castañeda (1999). Apart from the work by Castañeda on Chile, all previous ISEW studies have focused on developed countries. The results across these studies are very consistent: welfare increased in line with economic growth until the late 1970s or early 1980s (though at a slower rate), at which time the ISEW began to fall despite continuing increases in economic growth. These studies reveal that, beyond a certain point, the costs of achieving economic growth begin to outweigh the associated benefits. The resultant decline in welfare reflects a possible failure on the part of national governments to achieve sustainable development. The point at which marginal increases in economic growth result in negative returns has been labelled the 'threshold point' (Max-Neef, 1991, 1995). Such a concept is not new within the literature (Hicks, 1940; Pigou, 1962; Ng and Ng, 2004). Over the past three decades, the possible crossing of this point by developed countries has been widely discussed (see Daly, 1971, 2000; Barkley and Seckler, 1972; Zolatas, 1981).

Serious policy implications flow from these results for development planners. The major implication is that the primary goal of economic and social policy should not be the attainment of economic growth without consideration of its associated costs. For developing countries, this implication is significant as it challenges the underlying tenants of mainstream development economics (Clarke and Islam, 2004).

Developing countries are characterised by low income levels, unstable employment, political instability and poor social capital. Orthodox development prescriptions hold that economic growth will remedy these ills. Yet,

if a threshold point can be reached by a country with low national income levels, and economic growth causes diminishing and negative welfare returns, a whole new approach to development economics is required.

Application of the ISEW

A society is a system comprised of hierarchical and interconnected subsystems (Capra, 1982; Dopfer, 1979; Clayton and Radcliffe, 1996; Islam and Clarke, 2001; Islam et al., 2004) (see also Chapters 2 and 18). The subsystems relevant to human welfare include the economic, social, political, environmental and spiritual domains. Each of these subsystems interacts to form part of a larger ecological parent system (see Figure 8.1 below). The interrelatedness of these subsystems means that achieving economic growth may occur at the direct expense of one or more subsystems. This is invariably expressed in terms of undesirable feedback effects that not only

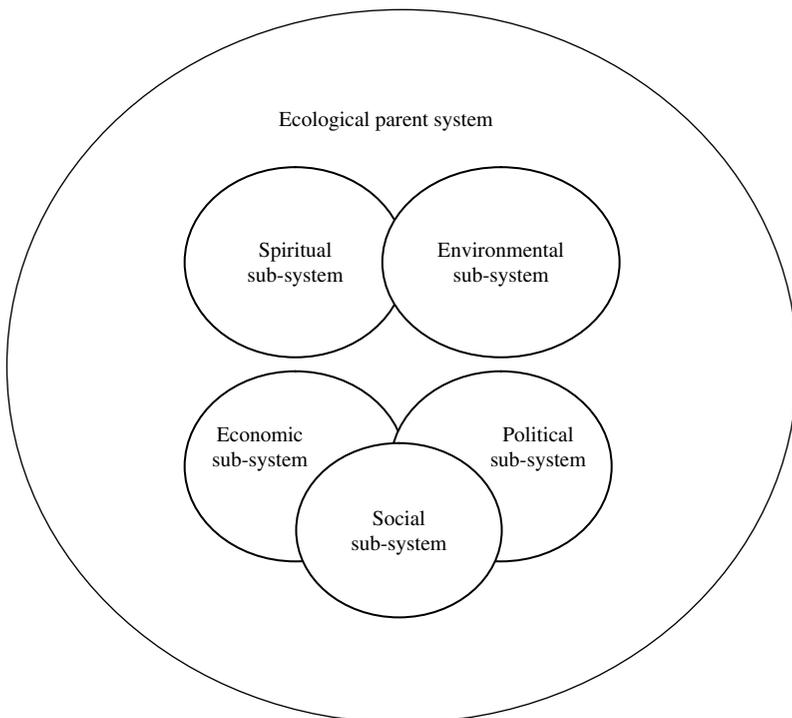


Figure 8.1 Representation of hierarchical and interconnected systems analysis

have an immediate welfare impact, but influence future economic outcomes. Clearly, measures of economic welfare must take all impacts, both direct and indirect, into account.

One of the strengths of the ISEW is that these various subsystems and their relationships and impacts on welfare are explicitly considered and accounted for in some way (Clarke and Islam, 2004). How? Consider the following factors that are estimated to calculate the ISEW for Thailand (other adjustments might be necessary for other countries) (Islam and Clarke, 2001; Clarke and Islam, 2004):

Economic domain

- Personal consumption adjusted for changes in income inequality;
- Benefits derived from consumer durables;
- Cost of commuting.

Social domain

- Public expenditure on education;
- Public expenditure on health;
- Private expenditure on health;
- Cost of increasing urbanization.

Political domain

- Benefits of government provided streets and highways;
- Cost of corruption;
- Public debt.

Environmental domain

- Air pollution;
- Water pollution;
- Noise pollution;
- Loss of forests;
- Non-renewable resource depletion;
- Long-term environmental damages.

Spiritual domain

- Cost of commercial sex work.

Consider, also, Table 8.1 that lists the items used to calculate the ISEW for Thailand along with the rationale for their inclusion. While the various forms of consumption account for the direct impact of economic activity on welfare (e.g. personal consumption and public expenditure on health, education and roads), the various defensive expenditures and environmental costs reflect the undesirable feedback effects of past activities on the economic, social, and environmental subsystems. The inclusion of commercial sex work is as an example of how increasing urbanisation, dislocation, and declining moral capital can impact deleteriously on the spiritual domain.

Table 8.1 ISEW per capita and GDP per capita for Thailand, 1975-99 (1988 prices in baht)

Year	Economic (millions of baht)	Social (millions of baht)	Political (millions of baht)	Environmental (millions of baht)	Spiritual (millions of baht)	ISEW (millions of baht)	ISEW per capita	GDP per capita
1975	289271	-14226	-3336	-81373	-18646	171690	4050	14662
1976	309968	-14380	-2771	-80580	-20371	191866	4440	15754
1977	333312	-17629	-5263	-137464	-22430	150526	3400	16942
1978	348689	-17828	-4460	-145862	-24558	155981	3449	18237
1979	368041	-17613	-5865	-70782	-25744	248037	5379	18819
1980	386847	-16607	-7034	-75363	-27190	260653	5550	19458
1981	405849	-20549	-8540	-79451	-28562	268747	5614	20206
1982	408616	-17597	-10231	-83773	-30133	266882	5464	20883
1983	432608	-17658	-11473	-83698	-32043	287736	5811	21729
1984	438488	-21985	-13914	-87772	-33754	281063	5556	22504
1985	439241	-25719	-15881	-90177	-35137	272327	5258	22996
1986	447554	-28279	-18989	-74774	-36950	288562	5448	23722
1987	483945	-35342	-17922	-78871	-40599	311211	5777	25561
1988	521801	-43117	-17445	-85397	-46051	329791	6000	28380
1989	552434	-48866	-16382	-91478	-51838	343870	6153	31316
1990	603071	-54663	-10593	-113112	-57650	367053	6519	34565
1991	622392	-60523	-7050	-120985	-62420	371414	6520	37073
1992	655585	-63159	-2937	-126737	-66967	395785	6849	39506
1993	719644	-57618	781	-134028	-72808	455971	7816	42765
1994	785056	-57295	3409	-141474	-79645	510051	8631	45174

1995	853 737	- 59 299	8 159	- 150 382	- 86 771	565 444	9 510	48 511
1996	929 336	- 66 005	10 343	- 158 653	- 91 513	623 508	10 372	51 489
1997	932 210	- 65 835	2 765	- 163 368	- 89 590	616 182	10 132	49 691
1998	830 688	- 55 185	- 292	- 163 192	- 79 414	532 605	8 665	45 348
1999	832 001	- 70 019	- 7 335	- 148 076	- 82 165	524 406	8 505	45 789

Source: Compiled from Clarke and Islam, 2004.

Due to a lack of space, a full explanation of the methodology used for estimating these separate costs and benefits is not provided here. It can be found elsewhere in Clarke and Islam (2004). In general, though, the methodology follows that set out previously in Daly and Cobb (1990) and Cobb and Cobb (1994). There is also a lengthy discussion on valuation methods in Chapter 7 of this book.

Results of the Thai ISEW

As both Table 8.2 and Figure 8.2 show, the trend movement of economic welfare for Thailand, when measured by the ISEW for the period 1975 to

Table 8.2 Summary of Adjustments for Thai ISEW

Item	Positive/ negative	Rationale	Methodology
Personal consumption		Basis of ISEW	From Thai National Statistics Office (NSO) (1997, 1999)
Income inequality		Accounting for inequality	Equally distributed equivalent level of income Atkinson's (1970)
Public expenditure on education	Positive	Adding in non-defensive expenses	75% of public expenditure on education due to low base (NSO 1997, 1999).
Public expenditure on health	Positive	Adding in non-defensive expenses	75% of public expenditure on health due to low base (NSO 1997, 1999).
Commuting	Negative	Subtracting costs for time lost	US\$219 per car calculated in 1990 extrapolated to cover all years (Tanaboorboon et al., 1990)
Urbanisation	Negative	Subtracted for defensive private expenditure	18% of Bangkok personal income is spent for access to clean water and air (World Bank 1999)
Private expenditure on health	Negative	Subtracted for defensive private expenditure	50% of all private health expenditure (Cobb and Cobb 1994; NSO 1997, 1999)
Public expenditure on roads	Positive	Accounting for services not included in public expenditure	50% of all public expenditure on roads (Daly and Cobb 1990; NSO 1997, 1999)

Table 8.2 (continued)

Item	Positive/ negative	Rationale	Methodology
Consumer durables	Positive	Accounting for services not included in public expenditure	10% of expenditure on private consumer durables (Daly and Cobb 1990; NSO 1997, 1999).
Corruption	Negative	Subtracting for unaccounted political costs to society	0.0088% of GDP (1975–81), 0.0074% of GDP (1982–88), 0.007% of GDP (1989–99) based on Phongpaichit and Piriya-rangsan (1994)
Debt	Negative	Subtracting for unaccounted political costs to society	50% of interest paid on public Debt (NSO 1997, 1999)
Air pollution	Negative	Subtracting costs of environmental damage	Costs of pollution abatement for CO ₂ , CO, NOX, SOX, SPM (Guenno and Tiezzi 1998, Dept. of EDP 1990).
Water pollution	Negative	Subtracting costs of environmental damage	Costs of cleaning water is 7.5 baht per kilogram of Biochemical Oxygen Demand (BOD) (Phansawas 1987; TESCO 1993; Dept. of IW 1986)
Noise pollution	Negative	Subtracting costs of environmental damage	1% of GNP (Daly and Cobb 1990; NSO 1997, 1999)
Deforestation	Negative	Subtracting costs of environmental damage	886 baht per hectare of forest lost to soil erosion (Panayotou and Parasuk 1990)
Long-term environmental damage	Negative	Subtracting costs of environmental damage	Estimated damage for each tonne of carbon emissions is 21.59 baht (Nordhaus 1991; Dixon 1999)
Commercial sex work	Negative	Unaccounted costs to spiritual system	3% of GNP (Phongpaichit et al., 1998; NSO 1997, 1999)

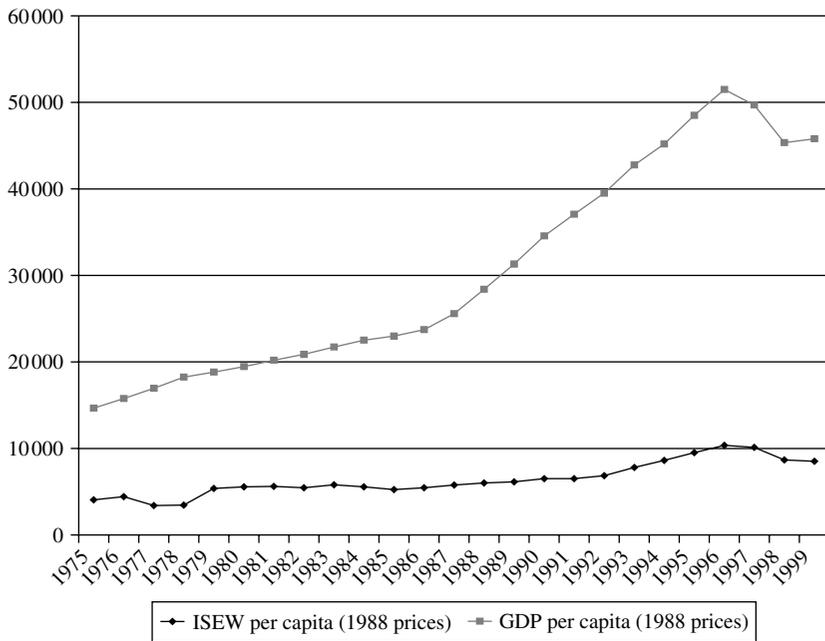


Figure 8.2 Comparison of ISEW per capita and GDP per capita measures of welfare for Thailand, 1975–99 (1988 prices in baht)

1999, was vastly different to that of economic welfare when conventionally measured by economic growth. The changing influences and feedbacks from the various subsystems severely impacted on human welfare. This has been captured by the ISEW in terms of the significant rise in social, environmental and spiritual costs. Not only did the ISEW per capita increase at a slower rate than per capita GDP, it also decreased at times when per capita GDP was increasing. The ISEW per capita rose and fell throughout the 1980s, effectively being unchanged in 1986 from the 1979 figure. In comparison, per capita GDP rose by more than 25 per cent over the same period. During the 1990s, both the ISEW per capita and per capita GDP increased. However, they rose at significantly different rates – ISEW per capita rising at a much slower rate than per capita GDP. It was during the 1990s that the divergence between the two indices became quite apparent.

Interestingly, the peak of both indices occurred in 1996, just prior to the Asian financial crisis of 1997. While Thailand's per capita GDP recovered very rapidly, the ISEW failed to rally as quickly. Until further evidence and data becomes available, it is too early to confirm whether this is a newly

established trend or a crisis-specific fluctuation. However, by drawing on the results of other studies (see Castañeda, 1999, for a survey), this new divergence might well have been expected, if not have been a predictable outcome.

It is important to realise that although both indices are money-metric, they are not cardinal in nature. Having said this, it is possible to infer from these two time series a distinct variation and divergence in the two trend lines. Thus, the welfare experienced by the Thai population between 1975 and 1999 is, in this instance, dependent on the shape of these two trend lines, rather than the magnitude of each and the distance between them.

As Figure 8.2 illustrates, the trend line for per capita GDP has three main phases; the initial steady rise to 1986, the accelerated growth to 1997, and the final dip and recovery to 1999. The pattern for ISEW per capita is quite different. The initial rise is slower – there is not an accelerated period of growth – nor is there an indication of a recovery in the final year following the decline in the index in 1997. Perhaps, of greater importance, is the growing divergence between the two indices. This increasing disparity suggests that the relationship or correlation between per capita GDP per capita and the per capita ISEW is weakening over time. Such a weakening casts doubts over the long-term desirability of both achieving economic growth and positioning economic growth as the main development policy objective.

The weakening relationship between economic growth and economic welfare is better illustrated in Figure 8.3 by normalising both indices and starting both per capita GDP and ISEW per capita with an index of 100.0 in 1975.

Up to the mid 1980s, both GDP per capita and ISEW per capita tracked each other quite closely with a slow increase. While both indices continued to grow from the 1980s, growth in per capita GDP was certainly more accelerated. This resulted in the divergence between the two indices becoming more prominent over the study period. Again, this suggests that the positive relationship between economic growth and welfare is becoming weaker over time as the increasing associated costs of economic growth begin to outweigh (or at least match) the additional welfare benefits.

POLICY IMPLICATIONS OF THE THAI ISEW

Since the middle of the last century, the central tenet of public policy in most economies has been the achievement of economic growth (Nordhaus and Tobin, 1973; Manning, 2001). This policy emphasis occurred in both developed and developing countries. Its emphasis has been justified on the assumption that economic growth automatically increases welfare (Samuelson et al., 1978; Kaosa-ard, 2000). The major question underlying

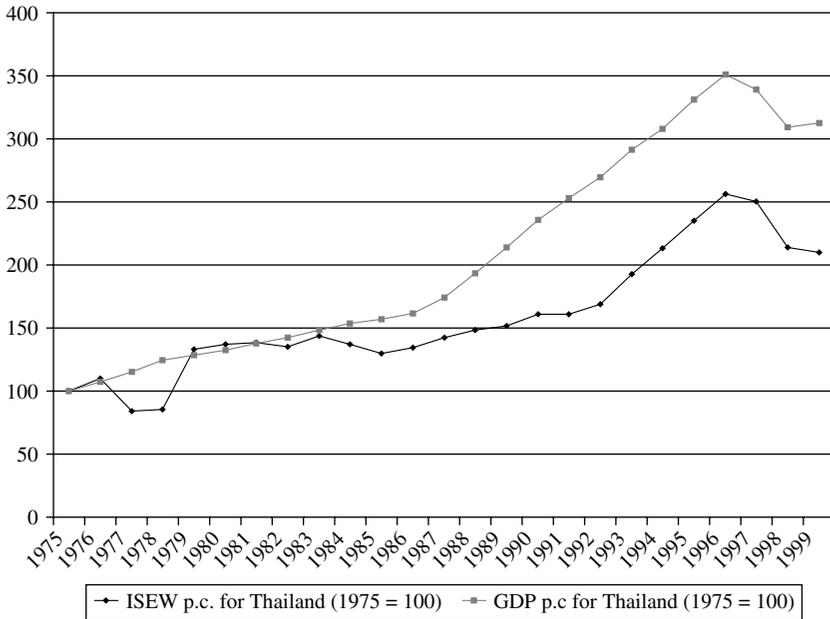


Figure 8.3 Comparison of ISEW per capita and GDP per capita for Thailand (1975 = 100)

the ISEW approach is whether an increase in economic growth ‘really reflects the true changes in welfare’ (Brekke, 1997, p. 158). The results discussed above suggest this is not always the case.

Achieving economic growth in the manner that occurred in Thailand has caused social, political, and environmental pressures such as pollution, urbanisation, increased levels of stress, etc., which has caused reduced levels of welfare. Therefore, expectations for improving society’s welfare through continuous economic growth need to be re-examined, as do the economic and social policies for achieving this outcome.

Hagerty et al. (2001) have shown that basing development policies on the results of welfare indices, such as the ISEW, is entirely legitimate if the results are: (1) judged to be reliable; (2) have established time series measures; and (3) can be disaggregated to analyse the index’s subcomponents. Hagerty et al. do note, however, that policies based on welfare indices are largely dependent on how welfare is defined within these indices. Nevertheless, and despite the potential policy value of alternative welfare indices, policy prescriptions based on the analysis of the ISEW are rare within the literature, especially for developing countries.

Three policies guidelines are set out below based on the results found in this empirical exercise for Thailand. It is reasonable to expect that the same policies would also be valid for other developing countries exhibiting similar characteristics to Thailand. The purpose of these guidelines is to encourage a widening of current development policy prescriptions.

Reduced Emphasis on Economic Growth

Economic growth generates both costs and benefits. It is undeniable that economic growth can lift income levels, reduce absolute poverty and increase material standards of living. But, of course, economic growth can also increase environmental, social and political stress. The desirability of economic growth should be determined by its net benefits on social welfare. A balanced approach to achieving economic growth must be encouraged. Economic growth is certainly an important ingredient for increasing social welfare, but it is not sufficient in itself. If the net benefits of economic growth are negative, welfare-enhancing policies that are not growth focused must be embraced.

Economic growth should not be the only priority of government policy. Economic growth aimed at specific sectoral areas (Warr, 2001) and for specific purposes would be better 'than pursuing economic growth for its own sake and hoping that the benefits will be spread widely enough that the poor derive some gains' (Fields, 1995, p. 76).

Increased Emphasis on Pro-poor Policies

The aim of pro-poor policies should be one of ensuring that those living in absolute poverty receive a greater share of the benefits of any future economic growth plus the residual benefits from previous growth. The north-east region of Thailand is one of the kingdom's poorest regions with poverty rates similar to parts of sub-Saharan Africa (Watkins, 1998). The welfare benefits of the economic growth experienced in Thailand over the past three decades have largely bypassed this part of the country whose population remains largely rural. However, the welfare costs of economic growth, such as environmental pressure resulting from increased industrial activity, have been disproportionately borne by these poor people (Dixon, 1999; Warr, 2001).

A pro-poor policy that ought to be given greater attention is that of income redistribution. Various public policy instruments exist in this regard, the most common being taxation. It is possible to redistribute income through increased (or enforced) taxation on wealth, property, inheritance, foreign currency transactions and the consumption of luxury

goods. Other valuable redistribution options include taxation credits and improved provision of welfare services in the form of a social security safety net.

Whilst there are attendant costs with redistribution (Pigou, 1962), it is more likely to reduce income inequality than economic growth. The reduction of inequality can also reduce the poverty elasticity of national income so that future growth has a greater impact on reducing poverty levels (World Bank 2000; Deolalikar 2002). The reduction of inequality also encourages social inclusion which, itself, has potential welfare benefits (Killock 2002; Maxwell 2001, 2003; McKay 2002; White 2001).

Increased Emphasis on Other Subsystems

Public policies that enhance the social, political, environmental or spiritual subsystems will have positive effects on social welfare. It is possible that policies of this nature might compromise efforts to achieve economic growth (e.g. tighter control over environmental resource depletion and improved labour market conditions can impede the rate of economic growth in the short run). However, the beneficial welfare impact may outweigh any costs of foregone or lost economic growth.

Adjusted income measures of welfare were initially developed on the implicit understanding that society is systems-based and the interrelationships between the various subsystems have a significant impact on social welfare. By adopting this approach – made explicit in the application of the ISEW to Thailand – the importance of non-economic subsystems in determining welfare becomes apparent.

POLICY IMPLICATION ROBUSTNESS

The suggested policy frameworks based on the ISEW results above have three strengths and one obvious weakness. This section will briefly review each of them before drawing the conclusion that policy implications based upon ISEW results are valuable and can increase the likelihood of sustainable development being achieved in developing countries.

Strength 1: Systems Analysis

The original development of income-adjusted measures of welfare (Sametz, 1968; Nordhaus and Tobin, 1973; Daly and Cobb, 1990) contained an implicit acknowledgement that the economy is part of a larger interrelating system. This general approach highlights the positive and

negative consequences that achieving economic growth has on other subsystems within society. This recognition is an important tenet of this framework.

Systems analysis must also be considered when drawing policy implications from ISEW results. It should be recognised that, just as economic growth impacts upon other domains, a focus on the environmental domain, for example, will also impinge upon other domains once feedback effects begin to manifest themselves throughout the total system. It should also be recognised that these interrelating consequences can be either positive or negative. While the ISEW attempts to account for systems-based feedback effects, it clearly performs this function in an imperfect manner. Thus, before policies based upon ISEW results are adopted and implemented, a more thorough systems analysis of their impact must be undertaken.

Strength 2: Capturing Sustainability Paths

Ecological sustainability cannot be adequately reflected by a single index number, such as GDP. However, as Atkinson et al. (1997, p. 62) have argued, 'sustainability is a property of the path the economy is on and not of the state of the system at any given time'. Given that the ISEW can reveal the trend movement in economic welfare that, itself, incorporates a range of environmental costs, it can provide insights into the 'sustainability' path of a particular nation. Enhancing a nation's sustainability path is a distinct strength of the policies emanating from ISEW results and analysis. Such policies can improve a nation's likelihood of achieving sustainable development.

Strength 3: Encouraging Alternative Development Prescriptions

In much in the same manner as the Human Development Index (UNDP, 1995), the ISEW is an alternative measure of development to traditional representative indicators, such as per capita GDP. By defining development more widely than simply income, the value of the ISEW in terms of its policy implications lies in its questioning of development orthodoxy and the creation of a space in which alternative development prescriptions are encouraged. Given the current predilection with economic growth, it is unlikely that the policy implications suggested by the ISEW results will be fully implemented in the near future. However, by proposing wider development prescriptions, the ISEW, like the Human Development Index, should impact on the policy debate by encouraging dissent from the orthodoxy. Over the long term, its impact on policy prescriptions may be quite significant.

Weakness 1: Construction and Uncertainty

As with all economic measures, the ISEW is a constructed number. Starting with personal income, the ISEW is calculated by making certain adjustments that reflect both the costs and benefits of pursuing a policy of economic growth. These adjustments are based on value judgments. Whilst these value judgments are explicit (and more explicit than the value judgments that underpin the standard national accounts, such as GDP), the final ISEW estimate is highly dependent upon the analyst's arbitrary values, choices, and preferences for: (1) the methodologies used to estimate the various costs and benefits, and (2) what costs and benefits are included or excluded from the ISEW (Clarke and Islam, 2004). See Table 8.1 which sets out the methodologies used to estimate the ISEW.

Given the different methodologies available to the researcher, different results can be obtained depending on the choice of assumptions and valuation techniques used. This can, of course, lead to a different development interpretation of a country and different policy implications. While a standard set of costs and benefits have evolved over time (starting with Nordhaus and Tobin, 1973, and Daly and Cobb, 1990), most ISEW studies involve slight variations in the items used and the valuation methods employed to estimate their value (cf. Daly and Cobb, 1990; Diefenbacher, 1994; Hamilton, 1998; Jackson and Marks, 1994; Lawn and Sanders, 1999; Rosenberg and Oegema, 1995; Stockhammer et al., 1997). In the case of the ISEW for Thailand, the costs of corruption and commercial sex work have been included. These were seen to be specific to the Thai development experience. While excluding these two adjustments would not significantly affect the final ISEW, different policy implications may follow (see Figure 8.4). Further, due to the methodology selected, other adjustments might be particularly large and overwhelm the remaining adjustments. For instance, in the case of the Thai ISEW, the environmental costs are twice as significant as any other subsystem adjustment, and may be solely responsible for driving the divergence between the GDP per capita and ISEW per capita indices.

Likewise, the selection of what is included in the ISEW is also central to the final analysis. This is a significant criticism of the ISEW (Neumayer, 1999). The decision to exclude or include an adjustment to income is often reliant on the analyst's opinion as to whether an activity associated with achieving economic growth can be considered a regrettable form of expenditure. Criticism of this approach centres on the exclusions of regrettables and whether many consumption goods could be also labelled regrettable, such as food, clothing, transport, driver education and insurance. According to Lebergott (1993, p. 8), 'Regret is a word of seismic potency. It can be applied to a thousand facets of the real world'. Extending the

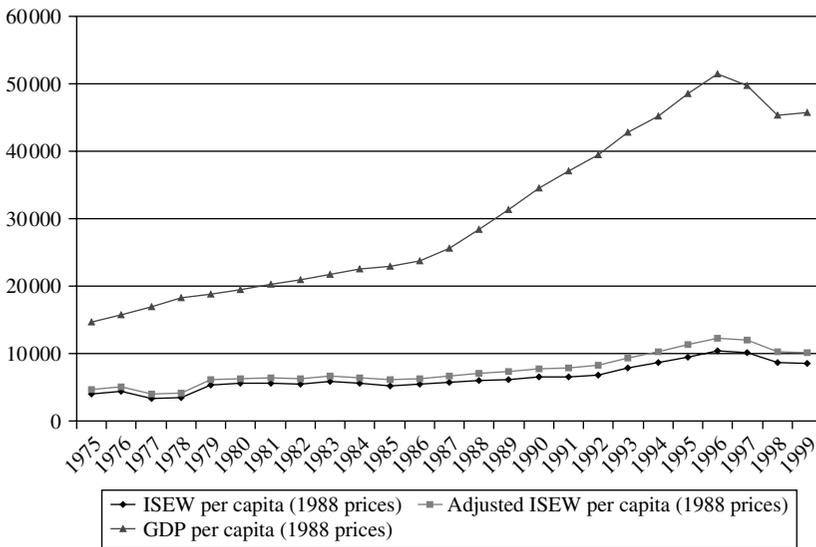


Figure 8.4 Comparison of GDP per capita, ISEW per capita and adjusted ISEW per capita for Thailand, 1975–99 (1988 prices in baht)

work of Sen (1993) in which food does not provide utility, but the functioning of food does, it may be legitimate to argue that expenditure on food is regrettable since it must be purchased to facilitate its functioning. In a similar manner, commuting is necessary to acquire income. Indeed, if the argument is extended to incorporate the Second Law of Thermodynamics, all consumption ultimately leads, not to utility or functioning, but to waste.

Clearly, the ISEW results upon which policy implications are based are heavily indebted to the value judgments of the analyst. As an uncertain and constructed number, a level of hesitancy should accompany consideration of the development policies it suggests. However, whilst the seriousness of this weakness should not be underestimated, it is not enough to condemn the ISEW to redundancy. Many of the problems associated with this weakness would be overcome if a standard set of methodologies and adjustments were uniformly undertaken when estimating ISEW for different countries. Perhaps a consistent and agreed-upon set of adjustments and methodologies should be developed so that the assumptions of the compiling analyst can be reduced or excluded altogether. As all ISEW studies undertaken reasonably approximate each other in terms of adjustments and methodologies, this

agreement should not be difficult to obtain (see Chapter 7). As mentioned, this weakness is not sufficient to dismiss the policy implications of ISEW results. Notwithstanding the problems associated with their estimation, the ISEW highlights the need to base alternative development policies on something other than the primacy of attaining economic growth.

CONCLUSION

This chapter has involved an empirical application of the ISEW to Thailand over a 25-year period, 1975–99. It has also highlighted the various policy implications that flow from the calculation of the ISEW. The results suggest that Thailand is already experiencing diminishing and negative welfare returns from economic growth. These results are not unique but have only been previously found for developed countries. It should be of great concern to development planners that Thailand has begun to experience diminishing returns at low income levels. Additional work is required in a number of developing countries to determine whether the experience of Thailand is unique or common to the developing world. If diminishing and negative welfare returns from economic growth can be reached prematurely, alternative theories of development must be found. Development policies should include a reduced focus on achieving economic growth, an increased emphasis on reducing poverty rates through income redistribution and a heightened emphasis on the impact that all interrelated subsystems have on economic welfare. Further work is also required to establish a common set of methodologies and adjustments so that the assumptions made by the individual analyst do not unduly bias the estimation of the ISEW.

ACKNOWLEDGEMENTS

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