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Environmental contradictions in sustainable tourism

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The principles of sustainable development are widely accepted, but, given the conflicts of interest that occur over time and space, their resolution is likely to be problematic. Nowhere is this more evident than in the field of tourism. There is probably no other economic activity which cuts across so many sectors, levels and interests. The relationship between tourism development, socio-economic development and the environment is circular and cumulative. Most tourism activity places additional pressures on the environmental resources upon which it is based, compromising the present and future interests of tourist and host populations as well as of tourism organizations. Without adequate environmental protection, prospects for development will be undermined. There is an essential need to build on the positive links between the environment and tourism and to break the negative links. The latter will not be easy, however, owing to the conflicts of interest that occur. The positive links may be described as win-win situations, benefiting environment and development prospects alike. Negative links are also likely to occur however. To break these, trade-offs will have to be made between conservational and developmental goals. An identification of the extent and nature of these trade-offs will be facilitated by environmental accountancy procedures which include environmental auditing.

KEY WORDS: Tourism, sustainable development, trade-offs, environmental accountancy.

THERE IS PROBABLY NO OTHER economic activity which transects so many sectors, levels and interests as tourism. These will range from the hotel industry to National Parks authorities, from tourist boards to government departments, and from tour operators to conservationist organizations. The various interests involved can be loosely grouped into four categories: the host population, tourist guests, tourism organizations and the natural environment. An examination of these four major sets of interest indicates, at first sight, that they have mutually-reinforcing aims in ensuring sustainable tourism development.

Firstly, the prime interests of the host population will centre around their needs in terms of improved standards of living both in the short and long term. Tourism earnings can play a significant role towards achieving this goal. All across the development spectrum from low, lower and middle income, and high income nations (as defined by the World Bank), there are examples of nations where tourism receipts figure very significantly in national economies (Table I).

They are especially significant in several Third World economies which have little other than their natural resource endowment upon which to base their development. Indeed, the prospect of such earnings has become a vital component of the development strategies of several small states and island economies anxious to diversify away from excessive reliance on primary products subject to the vagaries of the global economy. The Caribbean island of Dominica, for example, will face almost certain collapse of its banana industry as a result of withdrawal of protected status from the UK for Windward Island fruits, later this decade, in the face of competition of cheaper fruit from Central America. The Dominican Government is consequently promoting ecotourism as an alternative source of foreign exchange earnings.

Secondly, in order to fulfil the potential for enhanced standards of living, it is necessary to continue to attract the international tourists to bring in foreign exchange. It is, therefore, essential to carefully match the demands of a growing number of

TABLE I

The contribution of tourism receipts to export earnings and Gross Domestic Product

		1990 Percentage of GDP	1990 Percentage of export earnings
Low income	Nepal	2.0	35.2
	Kenya	5.9	42.9
Lower-middle income	Jamaica	18.6	54.9
	Thailand	5.4	18.8
Upper-middle income	Mexico	2.2	19.9
	Greece	4.4	31.9
High income	Hong Kong	8.4	17.3
	Spain	4.0	21.9

Sources: World Tourism Organisation (1992); World Bank (1992)

TABLE II

Tourist arrivals and receipts, 1992

Area	1992		% Change 1992/91	
	Arrivals (millions)	Receipts (US\$M)	Arrivals (%)	Receipts (%)
Africa	17	5167	+7.2	+12.5
Americas	102.1	76 567	+4.7	+6.3
E. Asia/ Pacific	58.3	43 291	+8.2	+7.4
Europe	287.5	147 205	+3.5	+6.5
Middle East	7.2	4356	+6.9	+9.7
South Asia	3.5	2119	+7.6	+8.1
World	476	279 000	+4.6	+6.8

tourists with the characteristics of a destination in order to ensure visitor satisfaction. The overall growth in tourist arrivals world-wide in 1992 was 4.6 per cent, with the fastest growing destination region being South East Asia and the Pacific with an average growth rate of 8.2 per cent in tourist arrivals between 1991 and 1992 (Table II). Within this region, the growth of arrivals to certain destinations has been even more significant. Trailfinders, Britain's biggest specialist ticket agency which sells a quarter of a million air seats a year, declares its fastest growing destination to be that of Vietnam.

Thirdly, the successful operation of tourism organizations, public and private, will result in increased foreign exchange earnings, employment generation, tax revenues and increased revenues and profits (Mathieson and Wall, 1982). They depend, however, on successful mediation of the two previous sets of interests.

The final interest, that of the environment, is the essential cornerstone. Unless the environment is safeguarded tourism is in danger of being a self-destructive process, destroying the very resources upon which it is based. The current example of Kenya is a graphic illustration of the economic significance of sound environmental management as the base-line of successful tourism operations. The Kenya Wildlife Service, faced with a projected decline of two per cent in wildlife tourist days between 1990 and 1995, with a corresponding drop in tourism receipts, has instituted reforms for the protection of the environment. It is estimated that such reforms will reverse this projected decline, resulting in an eight per cent increase in wildlife tourist days per annum and amounting to an increase in receipts of US\$306 million over the five-year period (Table III). These reforms embody 15 strategic elements which include better coordination of land use, involvement of the local population and integration with other sectors (EIU, 1992).

It can be seen, therefore, that the major role players in tourism all have a stake in sustainable tourism and that their present and future interests are in many ways tied to one another and to sound environmental practice. The protection of the environment is an essential part of tourism development. Without adequate environmental protection tourism development in particular, and development prospects in general are undermined, compromising the present and future prospects of tourism organizations, tourist guests and host destinations alike.

Given the multitude of interests involved, however, a completely sustainable outcome is likely to remain more of an ideal than a reality. With regard to development in general, the World Bank (1992) emphasizes the need to build upon the positive links between development and the environment and to break the negative links. With regard to tourism, it is possible to identify four different scenarios which are a reflection of the balance and relative strengths of environmental and developmental interests. (Fig. 1). The first of these is one where the positive links are immediately evident and mutually beneficial. The remaining three are a reflection of the conflicts that occur and point to the need for compromise resolution to arrive at more sustainable outcomes.

The win-win scenario

This is the situation where the positive links between environment and development result in environmental improvement at the same time as the promotion of income growth. In the field of tourism, such situations arise where sound environmental and business practice coincide (Sisman, 1994). The most obvious win-win situation is, perhaps, in the field of energy conservation (Fig 1 (i)), a double-edged sword that will reduce relative consumption of fossil fuels and consequent CO₂ emissions and at the same time reduce costs and enhance profits. A classic example of such a measure is the introduction of the latest

TABLE III

Forecast increase in tourism receipts in Kenya arising from the KWS programme for the environment, 1990-1995

KSh mn	1990	1991	1992	1993	1994	1995	Total
Receipts without project	4320	4234	4149	4066	3985	3905	24658
Receipts with project	4320	4666	5039	5442	5877	6347	31691
Increase due to project	-	432	890	1376	1893	2443	7033
\$ mn							
Increase due to project	-	19	39	60	82	106	306

Source: Economist Intelligence Unit (1992)

generation of fuel-efficient aircraft. The previous generation of aircraft not only caused greater atmospheric pollution, justly deserving the title of 'Coal-burners', but also, as they used more fuel per passenger-kilometre, relative carbon dioxide emissions were greater. Recent developments, such as winglets at the end of wings (which make the wing more efficient by reducing drag), and the high bypass turbofan engines have helped to increase fuel efficiency. Such developments mean that now approximately 40-50 per cent less fuel is used per tonne kilometre (Fig. 2. line (b)) and per passenger kilometre (Fig. 2 line (a)) relative to that used in 1972. On a ten-hour flight there is more than a ten per cent fuel saving on an identically loaded Boeing 747-400 compared with the previous model. There are obvious cost savings for the airline company, but these are also paralleled by significant reductions in carbon dioxide emissions per passenger-kilometre. It has been estimated that aviation contributes about

three per cent of global carbon dioxide emissions from fossil fuels world-wide (British Airways, 1993). It is, of course, evident that the overall growth in air travel implies a concomitant increase in total fuel consumption (Fig. 2 line (c)). In order to minimize environmental impacts of such growth, increased fuel efficiency becomes all the more significant. Continued reductions in emissions per passenger-kilometre, therefore, have a significant role to play. At the same time increased fuel efficiency results in reduced fuel costs per passenger and freight-kilometre. It is evident, therefore, that this is a win-win situation where sound environmental practice brings obvious benefits for other interests.

Such win-win situations will not always occur, however. Set into the overall context of sustainability, other considerations, economic and socio-cultural, have to be brought into the decision-making equation. Conflicts will occur between the different interests involved over time and space, and trade-offs will be necessary in order to arrive at the most sustainable course of action. These conflicts are particularly evident in Third World destinations, where the present and future interests of host populations, the natural environment, tourist guests and tourism enterprises need to be reconciled. It is, therefore, possible to identify three further scenarios in addition to the win-win case.

The win-lose scenario

This is represented by the situation where the environment benefits, but where other interests may lose out (Fig. 1 (ii)). Such an example is that of the designation of National Parks and Protected Areas which aim to fulfil conservational aims and, if properly managed, the expectations of tourists. The local population, however, will lose out if they are denied access. An example of where restricted tourism development

(i) WIN / WIN

Example: Increased fuel efficiency

<i>Environmental impact:</i>	<i>Impact on other interests:</i>
Reduce CO ₂ emissions	Reduction of costs to firm per passenger km

(ii) WIN / LOSE

Example: Designation of National Parks

<i>Environmental impact:</i>	<i>Impact on other interests:</i>
Conservation	Local population excluded from traditional activities

(iii) LOSE / WIN

Example: Coastal development

<i>Environmental impact:</i>	<i>Impact on other interests:</i>
Environmental degradation	Short term profit maximisation

(iv) LOSE / LOSE

Example: Destruction of coral reef for building material and access

<i>Environmental impact:</i>	<i>Impact on other interests:</i>
Beach erosion	Loss of attraction

Fig. 1. Examples of mixed outcomes for environment and development

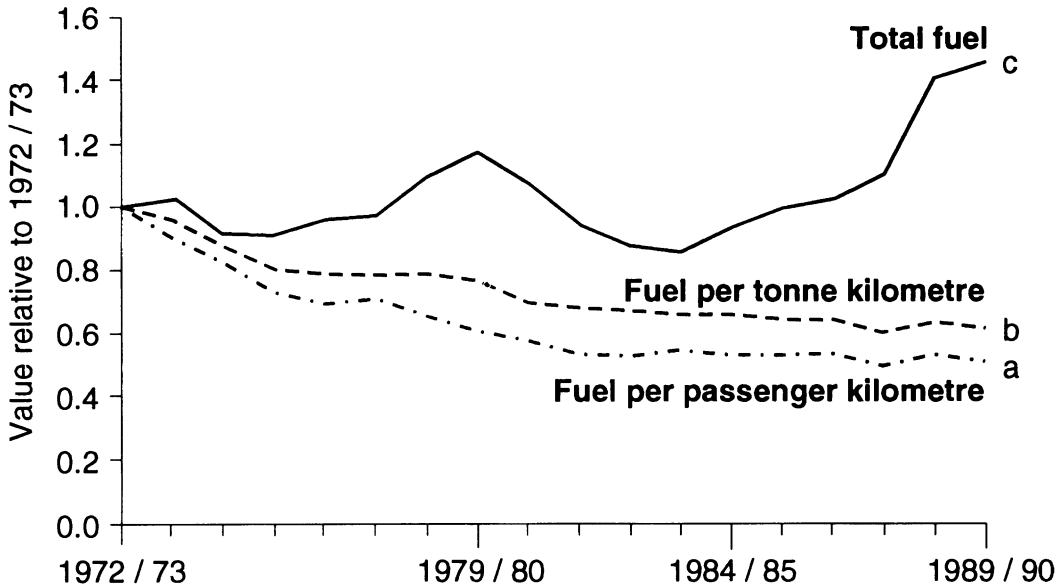


Fig. 2. British Airways: increased fuel efficiency over the past 20 years
Source: British Airways (1991)

has been allowed on a forest reserve is at Teluk Datai on the Malaysian island of Langkawi where a 14-kilometre cement road has been constructed as a joint venture between a Japanese company and the Kedah state government (Bird, 1989). Apart from a golf course, an exclusive resort has been built in the area, whilst the local population were denied access to the headland. Owing to the exclusive nature of the development they will, to all intents and purposes, be practically excluded in the future. An example of the exclusion of the local population from their traditional practices is furnished by the National Parks of East Africa. The Maasai nomadic pastoralists of the Ngorongoro Conservation Area in Tanzania have been denied access to their traditional grazing lands and it has been suggested that they have experienced a consequent decline in living conditions over the past 20 years (Olerokonga, 1992). Conflicts between wildlife and local people living adjacent to protected areas also need to be considered. Newmark *et al.* (1994) report on the results of a questionnaire survey undertaken of the local population living adjacent to the National Parks in Tanzania. Over 71 per cent of respondents reported problems with wildlife. Of these, 86 per cent reported crop damage and ten per cent the killing of livestock and poultry. Despite low levels of development and relatively high population growth rates, in many developing countries the proportion of total land area under protected status may approach or exceed the proportion under crops (Table IV).

The lose-win scenario

This situation, which occurs when the environment may be downgraded whilst other interests benefit, is a lose-win situation, even if it may be short lived (Fig.1 (iii)). An example of this is the case of coastal tourism development where the environment is downgraded in the interests of short-term profit maximization. On Langkawi the popular local picnic area of Tanjung Rhu was bulldozed in the late 1980s to enable the development of a proposed resort area (Bird, 1989). The loss side of the equation applies not only to the environment in this case, but also to the local culture as the devout Muslim population are directly confronted by the hedonistic lifestyles of the visiting tourists. Signs on the local beach declare not only in Bahasa Malay, but also in English, that 'Alcohol is the root of all evil'.

The lose-lose scenario

This is where, resulting from the degradation of the very resources which attracted tourists in the first place, all interests are compromised (Fig.1 (iv)). Indeed, without proper management this is likely to be the end state of the two previous scenarios.

A prime example is the destruction of off-shore coral reefs. This may result from direct physical damage or as a result of increased marine pollution. The former results from blasting to create access channels, such as in Barbados, or to utilize the coral for building material, such as in Sri Lanka, the Maldives and Bali. In the Maldives, a quarter of the

TABLE IV

Protected areas and cropland: percentage distribution for selected developing nations

	<i>Total land area (000 km²)</i>	<i>Percentage in nationally protected areas</i>	<i>Percentage under crops</i>
Botswana	582	17.2	2.4
Kenya	580	5.8	4.2
Namibia	824	12.6	0.8
Tanzania	945	12.6	5.5
Zambia	753	8.5	6.9
Zimbabwe	391	7.2	7.2
Belize	23	3.2	2.4
Costa Rica	51	11.9	10.4
Ecuador	284	37.7	9.3
Venezuela	912	22.2	4.3
Bhutan	47	19.7	2.8
Indonesia	1905	9.3	11.2

Sources: World Resources (1992–3); World Bank (1992)

coral mined from resort islands is used directly for resort construction (the remainder is used on the capital island of Malé). It will also result from souvenir hunting and careless treatment due to the mishandling of boat and scuba equipment, together with direct trampling of the reefs at low tide. Pollution results from the increased turbidity and sewage discharge which arise from the construction phase and ongoing site utilization, as well as petrol and oil spillage consequent upon boating activities. Destruction of the coral reefs not only has an opportunity cost in terms of the loss of the very resource which attracted tourists in the first place, but also results in loss of the protective barrier against coastal erosion. Ironically, therefore, it may result in the erosion of the sandy beaches which were also part of the tourism attraction, as has been evidenced along the coasts of Tanzania, Bali and Barbados.

A further example of a lose-lose situation is in Dominica where, on the trek to Boiling Lake, even the present low levels of visitation have rendered the paths prone to erosion from the frequent tropical downpours. This makes them increasingly dangerous even in dry conditions; a German tourist slipped to her death whilst traversing a particularly badly eroded section.

It can be seen, therefore, that there are a number of discontinuities which occur between the environment and tourism development. What is a win situation for one interest, level or sector is likely to be a loss for another. The complexity of the situation is further compounded, however, by the likelihood that these conflicts will vary over time and space. Mannion (1992) suggests that: 'What is sustainable is sustainable only for one time and for one place'. So, not only must the question be posed of for whom is tourism development sustainable, but also when and where.

Temporal discontinuities

The time dimension has already become evident from the previous discussion where short-term benefits to one interest result in long-term losses for others. They are also likely to result in long-term losses for the same interest. The concept of intergenerational equity is central to sustainable development but again conflicts are bound to occur. Once again this is particularly evident in the developing world. Poor populations often have no option but to choose immediate economic benefits at the expense of the long-term sustainability of their livelihoods. At the individual level the question may be one of survival, as Redclift (1992) suggests, 'there is no point in appealing under these circumstances, to idealism or altruism to protect the environment, when the individual or household are forced to behave "selfishly" in their struggle to survive'. At the level of the national economy, the overriding concern will be one of increasing foreign exchange earnings and reducing balance of payments deficits. Already there are signs in Belize that the sustainable tourism development that was being strived for is being compromised by the pursuit of economic gain (Cater, 1992; Munt, 1993).

Spatial discontinuities

The concept of intragenerational equity is also central to sustainable development but anomalies are evident when the spatial occurrence of the relative gains and losses are examined, they are invariably realized in different locations. This is most evident where, as a result of the international organization of tourism, profits and managerial earnings are repatriated to tourism company headquarters located in the more developed countries. Simultaneously there is a net reduction of tourism earnings at the destination, exacerbated by import leakages resultant from the need to import the requisites necessary to support tourism. It is also evident even where local participation is concerned. What is truly local participation? On the Malaysian island of Langkawi, for example, the entrepreneurs may be Malay, but they are largely businessmen from the mainland (Bird, 1989).

The scale of operation and its location are further complicating variables in the decision-making equation. Small-scale, locally-owned tourism ventures probably make a greater relative contribution towards sustainability in terms of enhanced standards of living for host populations (Cater and Lowman, 1994). Set against this apparent win, however, is the loss aspect that such ventures may penetrate the social and environmental fabric more deeply and have more lasting effects than large-scale operations confined to clearly defined areas such as the Nusa Dua complex in Bali (Fig.3), where four major international operations are represented, the Club Méditerrané, Sheraton, Hyatt and Hilton chains.

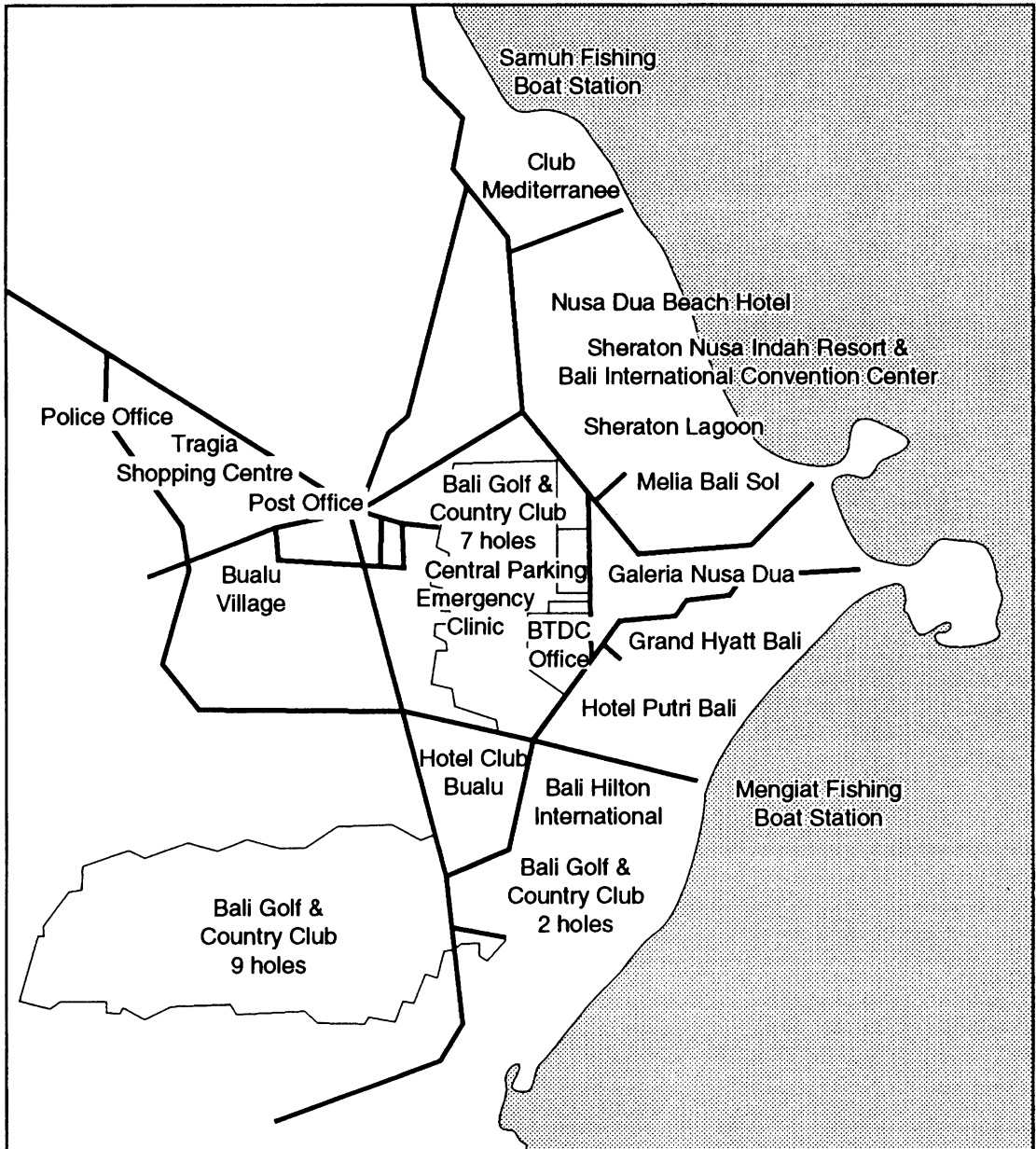


Fig. 3. Nusa Dua tourist resort, Bali, Indonesia

The situation is complicated still further at the local level when the daily operations of tourism enterprises are considered. On Langkawi the smaller accommodation units have a problem with beach pollution whilst the major resort hotels have proper treatment facilities. On the other hand, the energy requirements of the larger complexes with air condi-

tioning plants, swimming pool purification units, laundering facilities etc. are very much higher.

The need for compromise

In the light of the foregoing discussion, it is not surprising that the target of sustainable tourism remains an elusive one. To recognize the types of conflict that

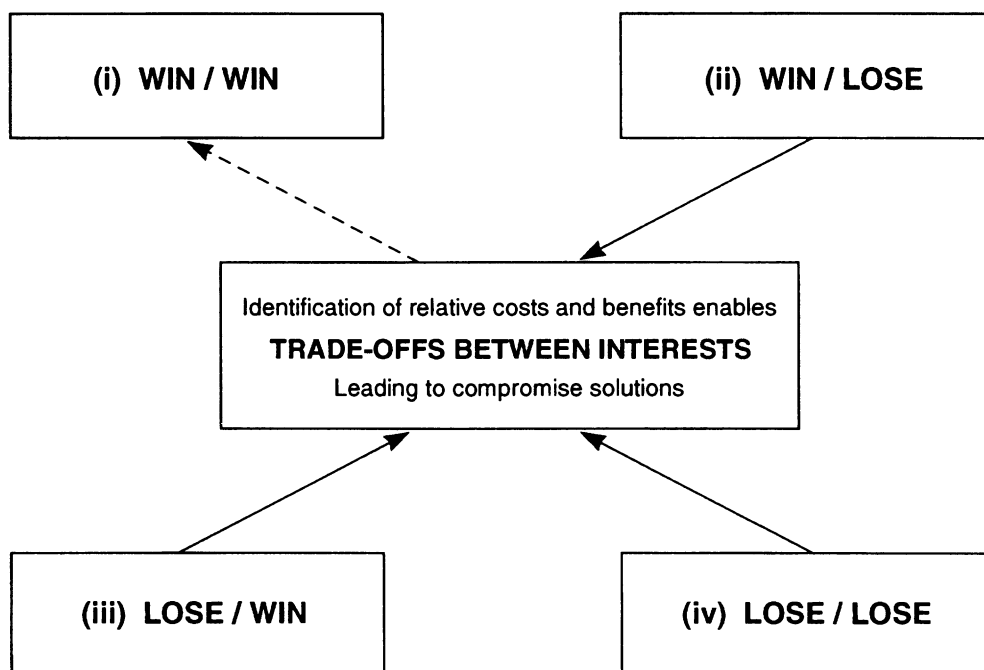


Fig. 4. The need for trade-offs between interests to achieve more sustainable outcomes

occur, however, is an essential step towards attaining more, if not completely, sustainable outcomes. Identification of the relative costs and benefits to the various interests should then be possible. To arrive at the most sustainable outcome will inevitably involve trade-offs, it is unlikely to be optimal either from the point of view of the environmentalist or the developmentalist. To enable such decisions to be made, however, policymakers need to be furnished with more detailed information on the extent and nature of such trade-offs. A major problem in the past has been that environmental considerations have not been incorporated in models or measurements and thus not in decision-making. The environment was externalized, treated as a 'free' good. This has been more fully documented elsewhere with regard to development in general (Pearce *et al.*, 1989) and to tourism in particular (de Kadt, 1992).

Particularly evident omissions in terms of environmental measurements exist in the accountancy procedures of firms. As the environment was not incorporated into accounting frameworks, the resultant picture which was then used as a basis for decision-making was an incomplete one, helping to

contribute towards the negative aspects of the scenarios described earlier. More complete accountancy procedures must include environmental considerations. One tool for 'green' accounting is that of environmental auditing. Goodall (1995) examines how this technique may be used to monitor how the products and processes of tourism interact with the environment. Such an exercise may be carried out not only at company and organizational levels but also for individual establishments and destinations.

Such improved procedures will help to break the negative links between tourism development and the environment and build on the positive ones to enable a move towards a more sustainable win-win situation (Fig.4), if only a small step on the way. Trade-offs between income and environmental quality need to be carefully assessed, taking long-term, uncertain and irreversible impacts into account (World Bank, 1992). The careful balancing of costs and benefits is likely to result in a compromise solution which is site-specific. It will probably be sub-optimal from the viewpoints of all concerned but, in the circumstances, will be the most feasible and the best practicable and, hence, more sustainable than hitherto.

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