

## **Tourism, Development and Conservation: a Saharan perspective**

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### *Abstract*

The paper explores the role played by tourism in both the destruction and the conservation of the Sahara's cultural heritage. In so doing, it takes the opportunity to present some of the results of a four-year research project into 'the geopolitics of the destruction and conservation of rock-art in the Sahara', which provides an analysis of both the many causes of its destruction and the difficulties being encountered in its conservation. A key factor in both the 'destruction' and 'conservation' of this heritage, as well as the Sahara's 'living' cultures, is tourism. After many years without tourism, the Central Saharan regions of Libya and Algeria, in particular, are showing the potential for becoming major international tourism destinations. However, the resumption of tourism in these regions in the last few years has revealed many of the more negative and detrimental features of 'mass tourism'. After examining the actions and responsibilities of both governments and local communities, the paper concludes that the way in which tourism is managed over the next few years will determine whether the environmental catastrophe predicted and feared by many of the Sahara's local communities will be avoided.

### **Introduction**

This paper is based on a four-year research programme (1999-2002) into the impact of tourism in the Central Sahara and a concurrent research programme entitled 'The geo-politics of the destruction and conservation of rock art in the Sahara'.<sup>ii</sup> As the title of the latter programme might suggest, my concern has not been to draw up a detailed inventory of damage to rock art and associated antiquities across the Sahara, but to focus more on the spatial, political, economic and social factors, as well as the intellectual implications, behind both the destruction and the management of the conservation of such antiquities. I should also make clear that although this paper is being presented at a conference in Libya<sup>iii</sup>, my remarks are addressed, except where specifically mentioned, to the countries and peoples of the Sahara as a whole. The looting and destruction of the Sahara's antiquities is a pan-Saharan problem. Its solution must also be pan-Saharan. A prominent Tuareg recently claimed that the Sahara is on the brink of an environmental catastrophe. He is quite correct. But if this catastrophe is to be averted, the countries of the Sahara must suppress their nationalisms and override their very different political and administrative systems to collaborate more effectively. In the same way that the creators of the Sahara's pre- and proto-historic antiquities had no concern for national frontiers, these 'lines on the colonial map' are more of a convenience than an inconvenience for present-day professional looters.

### **The scale and significance of the Sahara's antiquities.<sup>iv</sup>**

A consequence of thinking of the Sahara in terms of its component parts – the Egyptian or eastern desert, the Libyan desert, the Algerian Sahara, the Moroccan Sahara, the Sahel, and so forth – is that it becomes difficult to grasp its enormity. The Sahara is roughly the size of the USA and by far the largest hot desert in the world, with a very fragile eco-system comparable in its eco-environmental importance to

Antarctica and the Amazon Rain Forest - and deserving of the same protection. Within its vastness, the Sahara embodies an immensely rich natural and cultural heritage, both prehistoric and living, much of which has been recognised as warranting UNESCO World Heritage status. Recognition of this status has and is being extended to many other parts of the Sahara, other than the Tassili-n-Ajjer, in the form of National Parks. Amongst other things, the Sahara contains what Henri Lhote (1959) described as ‘the world’s largest collection of prehistoric art.’ The size of this collection is almost beyond imagination. I do not know the original source of the figure, but it now seems agreed that the Sahara contains some ten million paintings and engravings, although I don’t think anyone has actually got around to counting them! The importance of this collection is still not fully understood or appreciated. Indeed, until we have better dating, it is not inconceivable to suppose that in parts of the Central Sahara, such as Tassili-n-Ajjer and adjoining regions of southern Algeria and perhaps also in the Acacus and adjoining regions in Libya, the Neolithic revolution may predate that of Mesopotamia.

### **The scale of destruction**

The tragedy of the Sahara is that this extraordinarily rich cultural and scientific heritage, so much of which seems to have survived over thousands of years the harsh vicissitudes of climate and other natural forces, has been subjected in the last two generations or so to extensive and largely irreversible damage. The scale and speed of this destruction cannot be overemphasised. There is scarcely a corner of the Sahara which has not been looted or vandalised, while in some areas, such as Morocco, it has been estimated that as much as 40% of the known rock art patrimony has been lost to looting or vandalism.<sup>v</sup> The looting is not limited to rock art. Lithics and potsherds have been collected in their millions<sup>vi</sup>. Extensive areas of the Sahara have been subjected to what can best be described as systematic ‘vacuuming’ by professional looters to such an extent that the archaeological landscape of much of the Sahara has not been simply damaged, but ‘sterilized’.

### **The causes of damage**

The Sahara’s rock art and associated archaeological sites and landscapes are vulnerable to degradation and destruction by a range of environmental and human agents.<sup>vii</sup> The former should not be underestimated. Amongst the later, we can identify the actions of the indigenous populations, scientists working in both good and bad faith, photographers (professional and amateur) wishing to enhance the colour/texture of their subject matter, professional looters and ‘collectors’ (including archaeologists/ethnologists), bandits and the military, religious fanatics, local municipalities (public works and roads departments), oil and other mineral exploration and extraction companies, and many others, not least of which are tourists.

Before turning to tourism, which is the main concern of this paper, let me pass a few comments on the afore-mentioned:

*Indigenous peoples.* Where such sites are near centres of human settlement and occupation, material from the sites, especially stones that may include art panels, may be used for building houses, animal shelters, decoration, and the such like. Larocca (2003) describes such damage in parts of the Oued Draa and the Moroccan Anti Atlas. Amongst the nomadic populations of the Sahara, rock shelters containing rock art

may sometimes be re-used as shelters and consequently damaged by camp fires and other human activity. Amongst many of these populations, notably the Tuareg and Toubou (Teda), Palaeolithic and Neolithic stone implements are frequently picked up and re-used for multiple purposes. When I first lived amongst the Tuareg in the 1960s, I would invariably find various types of prehistoric grinding stone in daily use for grinding or working grain, fruits, animal skins and the such like. Also, many such stone tools, especially hand axes, were believed to contain certain magico-religious properties and were often collected and closely guarded by women for magico-religious protective purposes.

*Scientists.* Several experiments undertaken by scientists to preserve the Sahara's rock art have resulted in damaging it. The best-known example is probably the use of synthetic resins, reputedly by UNESCO scientists, in the Tassili-n-Ajjer in or before 1968.<sup>viii</sup> Five of the six experiments were undertaken on minor, relatively insignificant sites. Why one of these experiments (two areas covered) was undertaken on what is probably the most significant and best known of all the paintings in the entire Sahara<sup>ix</sup> remains a mystery. Much damage has been inflicted on rock engravings by scientists attempting to make casts of them. Larocca (2003) has documented appalling damage inflicted by a team of Spanish archaeologists in Morocco. Another infamous case of damage to petroglyphs (Larocca 2003) caused by moulding occurred in Libya's Acacus Mountains in the 1980's when an Italian team, lead by the Castiglioni brothers, made replicas of engravings to exhibit in Italy.<sup>x</sup> In spite of the Castiglioni brothers' condemnation by both the Libyan authorities and the archaeological community, the casts are still proudly displayed in Varese, together with a series of photographs taken during the application and removal of the thermosetting resin. A justifiable case for making replicas of rock art panels can be made when sites are under threat. That was the case at Dabous in western Air (Niger) where a team of conservationists, lead by Jean Clottes and supported by TARA (Trust for African Rock Art) and the Bradshaw Foundation, successfully made casts of the giant giraffe engraving. Castes of the 26' giraffe, available in aluminium and FRP resin, are being advertised for sale at \$75,000. Diamond shaped castes of the head are available at \$10,000. Profits from sales are reportedly being injected into rock art preservation projects, which is admirable. However, fear is being expressed in some quarters (Larocca 2003) that the commercialisation of petroglyphs in this way may tempt less altruistic persons to make and sell mouldings of other well-known sites with inevitable risk of damage.

*Photographers.* Wetting and washing paintings, mostly by photographers to enhance their colour, has done immense damage to paintings. The moistening of paintings upsets the physical, chemical and biological balance of both the paint substances and the supporting rock. Henri Lhote (1958), probably the most widely read 'authority' on the Sahara's rock art, strongly advocated the 'washing' of paintings, with the result that hundreds of visitors to the Sahara, especially photographers, as well as guides, have followed his advice. The result is that visitors to the Tassili-n-Ajjer (Algeria) looking for the frescoes reproduced by Lhote now find that several are nothing more than a pale reflection of their former glory, while others have disappeared altogether.<sup>xi</sup>

*Looters and 'collectors'.* Millions of portable artefacts of the Sahara's cultural heritage have been looted. Vast regions of immense archaeological importance have been simply sterilised by systematic 'vacuuming' of artefacts. Hundreds (perhaps thousands) of rock art sites, many of supreme intellectual significance, have been vandalised. Many paintings and engravings have been removed, often hacked or cut

from the rock face with chisels or chain saws. Graffiti and other forms of despoliation are rampant. Much of the blame for looting and vandalism lies with foreign (mostly European) tourists. Over the last two generations the Sahara's better known rock art and associated archaeological sites have been visited by an ever-increasing stream of tourists, many of whom seem to have an almost insatiable lust to touch, hold and possess a part of the Sahara's prehistory. More serious than the 'innocent' tourist are the professional looters. These are professional operators, currently mostly Germans,<sup>xii</sup> who enter the Sahara with false-bottomed vehicles (and other devices) to scour archaeological sites for artefacts which are then sold into the global 'ethnic' market, usually via the internet and at considerable prices.

Two aspects of this looting are particularly serious. The first is that professional archaeologists and ethnologists who should know better have played a major part in this process. Many of the earlier archaeologists to explore the Sahara believed it was their right, indeed their professional job, to collect specimens for the Museums or other institutions which sponsored them. For instance, during Bagnold's first exploration of the Sarra Triangle in 1932, that 'scrap of desert on the borders of Libya with the Sudan and Chad'<sup>xiii</sup> the accompanying archaeologist, Dr Kenneth Sandford, an Oxford academic, was 'kept busy collecting and sorting specimens for the museums back in Cairo, Khartoum, Oxford and Chicago'.<sup>xiv</sup> Saul Kelly (2002, 76-7) writes rather amusingly: "One can detect some impatience on Bagnold's part as, having extracted the cars from the soft sand patches with the aid of steel channels and rope ladders, the expedition was slowed down by Kennedy Shaw's and Sandford's constant search for the choicest specimens. The slight resentment felt by the archaeologists led them to christen their leader 'On-On Baggers'". France's best known and most celebrated 'Saharien', Henri Lhote (1959, 17), wrote quite unashamedly about collecting cultural objects. In describing a passage south of the Tenéré, he wrote: "scattered about this prehistoric charnel-house was an abundant and magnificent stock of stone implements, many of which I collected... delicate arrow heads in flint, gauges (sic) for fishing nets, and also superb bone harpoons." While in the Tassili he admitted to encouraging Tuareg children to look around for arrowheads and other such objects for him. Lhote himself made one of the largest personal collections. As another 'saharien' once remarked: "What wasn't paid for by the *Musée de l'Homme* went to Lhote's own private collection."<sup>xv</sup> Many sites that were excavated by archaeologists were never recorded, with the excavated materials being simply 'looted'. Again, the worst offender was probably Lhote. The results of many of the sites that he excavated, both on the Algerian Tassili plateau and in the surrounding piedmont areas, perhaps numbering as many as eighty, have not been published, nor have the extensive remains been made available for analysis. That is in spite of persistent requests from his colleagues to do so and his many promises (Alimen et al 1968, 423) 'to make a general study of all the Tassili sites and the enormous number of remains that were collected during our different expeditions'.<sup>xvi</sup> Indeed, it is almost certainly true to say that no single human agent has contributed more to the destruction of the Sahara's archaeological record than Henri Lhote himself. In Lhote's defence, it has been put to me (Keenan, 2002, 145) by an internationally recognised archaeologist that: "Lhote was by no means unusual in archaeology for taking credit for the discoveries of others or at least giving only minimal credit to his predecessors; that he did not set out deliberately to damage the art, nor to incite the public to do the same, in that it was standard procedure in those days to 'wash' rock paintings, as nobody knew any better, and that even if they had known of the potential damage, they would doubtless still have argued that it was

worthwhile and necessary to wet the paintings just in order to make the best possible copy; and that Lhote was a collector, not an archaeologist or intellectual, whose amassing of a huge abundance of artefacts from the Sahara was by no means unusual but something that still goes on. In short, it may be argued that although Lhote had many faults, he was no worse than many other people of the time. Indeed, in his arrogance, self-aggrandisement, territoriality about his ‘finds’, his non-publication of excavations, and his collecting, he was fairly typical of his kind.” These practices do still go on. In the last few years alone, professional archaeologists (or, in some instances, people claiming to be professional archaeologists) from France, Spain and Italy and elsewhere (Germans are awaiting arrest) operating in Morocco, Western Sahara, Algeria, Libya and Niger, have been arrested or charged for serious damage to or looting of rock art and associated antiquities.

The second serious aspect of this looting, which I shall talk about in more detail below, is that substantial local markets for such artefacts, although inherently ‘illegal’, are developing through much of the Sahara. In Morocco, an internal market for stolen/looted goods seems to have developed almost with the connivance of the state. In the Sahel countries and Mauritania, the paucity of the state’s resources makes it difficult to stop such developments. In Algeria and Libya, there is a relatively strong regulatory environment which has made it difficult for local traders to develop such a market. The main point, however, to which I will return below, is that such markets cater mostly for the demand of tourists and are predicated on local conditions of economic poverty and need and a lack of educational awareness of the long-term damage such markets are doing to both the local economy and the cultural heritage.

*Vandalism and Religious fanatics.* What I have said so far would suggest that most of the damage to Saharan rock art and associated archaeological sites is of external agency. That was certainly the case until fairly recently, and probably still is today in the Sahelian countries, and perhaps also Libya, but probably not in either Morocco or Algeria, where an increasing amount of damage, in some parts the majority, is being committed by nationals of the countries concerned. In the Algerian Sahara, for example, most of the graffiti vandalism of rock art sites is in Arabic and being perpetrated by nationals from the north. Some are on holiday, many have been posted to Saharan regions as civil servants or military. Some of this action is being undertaken by religious zealots. These actions may be founded on ignorance, but they are also a manifestation of the disrespect that is often shown by peoples of the littoral for the prehistoric and indigenous cultures of the Saharan regions. In the Sahelian countries, where the main centres of population and government are in the south of the countries concerned (Mali, Niger, Chad), we see the geographical reverse of this pattern. Irrespective of motivation, such damage is the cause of increasing political tension in many parts of the Sahara, which central governments disregard at their peril.

*Bandits and military.* Much of the central Sahara is now the domain of smugglers, arms traffickers, bandits and other outlaws. Several shelters containing rock art, in which such outlaws have ‘holed up’, have been damaged by bullets, presumably for amusement or in testing weapons. In many parts of the Sahara damage has been ascribed to the military, either in the form of their general disrespect for the environment and cultural heritage, or during the course of military action or manoeuvres. In the former Spanish Sahara, for example, Spanish soldiers did considerable damage to sites, not least through removing rock art panels and other artefacts as ‘souvenirs’. A report undertaken on the liberated zone in 2002 (Brooks, N. et al. 2003) describes more recent damage. However, most of the damage recorded by

this expedition was thought to be caused by tourists and archaeologists rather than the military. The most damaged sites were those that had been studied by archaeologists from the universities of Gerona and Grenada.<sup>xvii</sup>

*Local municipalities.* There are several recorded incidents of local municipalities destroying rock art and associated archaeological sites in the course of building activity, road construction and the such like. Such damage is usually inflicted quite unwittingly and is the result of ignorance and lack of educational awareness by the authorities concerned.

*Oil companies.* Exploration for oil and gas has been undertaken in many regions of the Sahara, but with the bulk of current output being restricted to Algeria and Libya. In Algeria, there are strict environmental controls and regulations, with both the national oil concern, Sonatrach, and foreign oil and gas companies at times being almost over-meticulous in conducting archaeological and environmental impact assessments of their operations. That, regrettably, has not been the case in Libya, where the British oil company, Lasmo (subsequently taken over by the Italian operative Agip-ENI) recently caused major archaeological and environmental damage to the Messak Settafet plateau.<sup>xviii</sup> One positive outcome of the Lasmo affair, is hopefully that in future no oil company or national government in the Sahara (or elsewhere) will dare to countenance such reckless activity.

### **The development of tourism and the management of conservation**

The biggest problem now facing Saharan countries in terms of the conservation of their cultural heritages is tourism. I should emphasise at the outset that the problem is not tourism *per se*, but the way in which the development of the tourism industry in the Sahara is managed.

Travel and Tourism is the world's largest industry accounting for 10% of world GDP. However, in the case of North Africa and the Sahara, we have an extraordinary situation. This is that the Sahara's two largest countries, namely Algeria and Libya, both of which abut the world's largest travel and tourism market, Europe, have two of the least developed tourism industries in the world. These two countries have two further salient features in common: (1) the economies of both countries are based almost entirely on hydrocarbons, which contribute some 98% of foreign exchange earnings. (2) The tourism industry in both countries, which as a potentially high foreign exchange earner could reduce both countries' dependence on hydrocarbons, has remained undeveloped for largely political reasons. In spite of these structural similarities, it is arguable whether the need to develop the tourism sector is the same for both countries. Unlike Libya, which has far higher per capita wealth than Algeria, Algeria is racked by poverty: some 30% of the population is unemployed and some 40% of the population is without satisfactory housing. The high labour intensiveness of tourism would therefore appear to make its development more attractive to Algeria than Libya, which suffers comparative labour shortages in the less skilled sectors of the economy.

However, while many developing countries have been seduced by the potential economic benefits of tourism, nearly all of them have now learnt that there can be irreversible 'downsides'. In both Algeria and Libya the potential 'upsides' and 'downsides' are extreme

### **The impact of Tourism**

Tourists themselves are not necessarily agents of destruction. On the contrary, tourists and tourism can and must play a major role in the overall conservation management of sites. However, as an agency of destruction, tourism must be looked at in terms of both its direct and indirect actions and consequences. In terms of direct actions, we must distinguish between the actions and roles of tourist agencies and tourists themselves and also distinguish, as do the people of the Sahara, between foreign (European) and national tourists. We must also distinguish between the ‘souvenir’ hunting of tourists and the actions of professional looters who enter the Sahara in the guise of tourists or tour operators. In terms of indirect actions we need to look especially at the development of various local markets and associated entrepreneurial and business activities.

*Tourism agencies.* In most towns of the central Sahara, tourism provides the only business and employment opportunities other than local commerce and the local or regional administration and associated government services. Indeed, with the exception of the hydrocarbons sector (which is not labour intensive) and a few other extractive enterprises, such as the much-reduced uranium mine at Arlit in northern Niger and the iron ore workings of Mauritania, tourism is the central Sahara’s sole industry. Moreover, it is an industry with a low threshold of entry, requiring little more than access to a 4WD vehicle. Towns such as Tamanrasset, Djanet, Agades, Ghat, Timbuktu, etc are literally swarming with ‘wan-a-bee’ tourism agencies. Tamanrasset and Agades, for example, each have something in the order of a hundred such agencies, although no more than about half a dozen in each town are able to cater properly for the European market. With more agencies than there is business to sustain them, competition is not only acute, but literally ‘cut-throat’.<sup>xix</sup> Such intense, largely unregulated competition results in dangerous cost-cutting, especially in vehicle safety and environmental protective measures. However, the most damaging action on the environment, is the pressure for tourist agencies to provide their clients with ‘unique’ trips. This often involves searching for ‘unknown’ rock art sites, which need not necessarily be damaging to the sites, and helping their clients to find and collect prehistoric stone tools, potsherds and so forth. Although it is illegal to remove such artefacts, there are very few agencies which actively ensure that their clients restrict their desire for ‘souvenirs’ to photographs. Indeed, it is probably true to say that the majority of agencies not only search out such sites for their clients but actively help them collect such artefacts and then smuggle them out of the country. The result is that most of the best-known and accessible sites have been completely sterilised. And, as tourist numbers increase, so the scouring of the desert intensifies. For example, a reconnaissance of the most accessible terraces between the much-publicised Temet dunes and Air (Niger) in November 1992, which had been liberally covered with Palaeolithic and Neolithic tools and pottery as recently as 1998, revealed that they had been thoroughly scoured: not a single stone tool or potsherd could be found. The same reconnaissance revealed that most of the western margin of the Tenéré desert appeared to have been equally well scoured.

Foreign tour operators are by no means exempt from culpability for such damage. Indeed, some of the most severe damage to the cultural heritage of the Sahara is directly attributable to European tour operators. The two worst cases of recent times involved Italian and German operators. First: after the lifting of the embargo on tourism to Libya, a large number of predominantly Italian tour operators stormed the Acacus-Messak mountains of SW Libya. Some 45,000 tourists are estimated to have visited the region between December 1999 and April 2000.<sup>xx</sup> The damage inflicted on the rock art of the region was immense: some forty rock art shelters are estimated to

have been severely and irreversibly damaged in this orgiastic catastrophe. Second: since the re-opening of both Algeria and Libya to tourism in the late 1990s,<sup>xxi</sup> at least one Munich-based tour operator has been regularly taking groups of tourists, using his own vehicles, to both countries to loot huge quantities of prehistoric stone tools and other such artefacts for subsequent sale via the internet.

Some idea of the potential profits to be made from such operations can be gleaned from the Acacus-Messak debacle. If we assume that each of the 45,000 tourists paid an average of £750 (Euro 1,150), gross turnover was around £35 million (Euro 50 million). If we assume the operators worked on a 20% margin, this gave a profit of around £7 (Euro 10.5 million): not bad for a few weeks work. In the case of the German operation, most artefacts sell for well over Euro 100, with better specimens fetching nearer to Euro 1,000.

*Tourists – foreign and national.* Although we have no empirical evidence, it is probably true to say that the vast majority of tourists are extremely respectful of the Sahara's environment and cultural heritage. However, as the above-mentioned devastation of the Acacus testifies, both tourists and tour operators, unless strictly regulated and controlled, can pose a major threat to the Sahara. Many tourists are still uneducated about both the Sahara's environment and its material cultural heritage. For instance, tourists visiting the Tassili after reading Henri Lhote's book (Lhote, 1958) will quite reasonably believe that it is not harmful to wet rock paintings to enhance their colour. More see it as quite harmless to 'pick up stones' as souvenirs, especially when they see the same artefacts being sold by local people in the markets, shops, hotels and by the road side. Similarly, while most tourists give lip service to not leaving litter, an extraordinary amount of litter - notably food tins, glass bottles (mostly alcohol) and plastic - despoils much of the desert. Litter has become a major problem on the Tassili-n-Ajjer plateau, while the Tassili-n-Ahaggar (to the SE of Tamanrasset) has become so littered that for the past two years a group of tourism agencies in Tamanrasset have organised an annual clean up at their own expense.

While the above comments are directed predominantly at foreign (European) tourists, I am inclined to think that more damage is now being inflicted by national rather than foreign tourists. The Tuareg of Algeria distinguish between foreign and national tourists in almost 'racist' terms. They refer (Keenan, 2003) somewhat derisively to the *gens du nord*, that is Algerians from the north of the country, as *Chinouï/Chnaoui*, from the French *chinois* – Chinese.<sup>xxii</sup> The explanation for calling them 'Chinese' is because "they are white and behave like foreigners". However, when they or Algerian emigrants living in France visit the Sahara as tourists, they are referred to as *Taiwan* because "they are like the cheap spare parts made in Taiwan, compared to the expensive, original, quality spare parts - namely European tourists." However, there is more to this distinction than mere purchasing power. Tuareg believe that northern Algerians are disrespectful of their culture and are now responsible for most of the degradation of the environment. While such sentiment is based partly on long-standing animosity towards les *gens du nord*, it also reflects a great deal of truth in that most of the graffiti and general despoliation of rock art sites and the surrounding landscape are inflicted by these people. Not surprisingly, such practices are doing much to exacerbate regional and political tensions. While similar disrespect for the culture of the desert peoples, notably the Tuareg and Toubou, is found in the Sahelian states of Mali, Niger and Chad, I suspect that this distinction is less prevalent in Libya as a result of the Peoples' Revolution and the greater geographical proximity and the historical and cultural integration of the littoral and desert regions.



*Professional looters.* These people can only be counted as tourists in as much as they usually enter the Sahara as tourists or as tour operators. They are highly professional operators, using national borders for their convenience and keeping abreast of archaeological finds by reading archaeological research papers, picking up on published GSP data and so forth.

*Entrepreneurs and local markets.* Entrepreneurial activity associated with the tourism industry is extensive, ranging from charter airline services, through the hotel, restaurant and accommodation sector, foreign/local tour operators, transport - especially 4WD – services, etc. One of the major impacts, in terms of damage to the cultural heritage, is through the encouragement that the industry gives to local people to supply the tourism market with cultural artefacts, notably prehistoric stone implements. There is scarcely a settlement in the Sahara in which a local market selling such artefacts will not materialise within minutes of the arrival of tourists. The development of such markets, founded on ignorance of the damage they are doing to the local cultural heritage, are driven as much by poverty and the need for money as by the demands of the tourists. Indeed, I have witnessed tourists buying such objects in some of the most remote and impoverished corners of the Sahara simply because they feel that they should contribute to the alleviation of hardship, rather than for any desire to possess the items being sold. Further stimulating such markets are the traders, agents and ‘collectors’ in the main tourist centres who have developed networks to the most distant desert communities to provide them with a supply of such ‘*objets d’art*’ for the *souks*, shops and hotel foyers of the tourist centres.

## **The Solution**

Three points need to be understood:

1) Tourism can be a major contributor to the of socio-economic development and betterment of the Sahara.

2) Socio-economic development, in the form of tourism, need not be at the expense of conservation. Indeed, the two can and must work hand in hand, for the economic future of the peoples of the Sahara lies not in the hydrocarbons sector, nor in exploiting the Sahara’s subterranean water supplies, but in the long-term conservation of its unique physical environment and cultural heritage, which tourists will always pay to come and see. The key concept is ‘environmentally sustainable development’.

3) The economic future of most Saharan communities is dependent on the conservation of their rich cultural heritages. When the oil has run out, the Sahara’s museum of prehistoric rock art will still be receiving paying visitors.

How can this heritage be conserved?

I have highlighted the extent and speed of damage that can be inflicted by various agents, notably tourism, looters and vandalism. The first priority for all the countries of the Sahara is to ensure that they do not open the gates to tourism simply for the short-term goals of acquiring foreign exchange or to demonstrate that they are politically ‘normal’, nor until they have the requisite conservation and tourism management policies and structures in place. They must also arrest and prosecute with maximum speed and publicity the professional looters I have described above. This is not difficult: full details, including dates and routes of travel have been given to the authorities.

Once these measures have been taken, the countries of the Sahara must work together in exercising sufficient political will in two key directions: education and training and the greater involvement of local communities.

*Education and training.* A massive educational extension policy needs to be implemented in all Saharan countries, so that peoples at all levels are made aware of their cultural heritage, why its conservation is so important and how it can be effected. For example, people need to understand why it is important to conserve the total archaeological landscape, not simply the specific sites within it. As part of these educational initiatives, there is a need, in all Saharan countries and at all levels (national, regional, local), for training in the management of both conservation and tourism.

*Involvement of local communities.* No tourism or conservation strategy will work without the full participation and involvement of local peoples and communities. The first and last line of defence against the damage I have described in this paper lies in the hands of local communities. In the same way that Tuareg regard tourism as ‘their industry’, and must be allowed greater control of it, so political authorities must transfer much greater control to local communities. This is not easy for those countries which have highly centralised, relatively undemocratic political systems. Nor is it easy for those countries in which ‘corruption’ has become almost endemic.

However, the solution, like the problem, must ultimately be both pan-Saharan and global. In the same way as looters have no regard for national frontiers, being in Libya’s Ubari sand sea one week, Algeria’s Tassili-n-Ajjer the next and Niger’s Tenéré desert the week after, so the countries of the Sahara must work more closely together. Institutions such as the recently established *Fondation Déserts du Monde*<sup>xxiii</sup> may help in this regard.

Responsibility for the successful implementation of the solution lies as much with the international community as it does with the national governments of the Sahara. The Sahara, like the Antarctic and Amazon Rain Forest, is a global heritage site. In the same way as the international community has played a major part in the Sahara’s degradation, so it must take responsibility for its conservation. Such responsibility goes beyond the mere contribution of financial resources (which are important). It involves providing the encouragement, support and the necessary expertise, and the transfer of skills in the form of conservation and management training.

The key to the future of the Sahara lies with Algeria and Libya, its two largest countries, and its mostly richly endowed both in terms of hydrocarbons and the their of cultural heritages, antiquities and environments. They are both in the rare position of having grossly undeveloped tourism industries. They therefore have the opportunity to become examples to the world of how environmentally sustainable tourism can be developed in such fragile environments. But, they also have the chance to ‘get it wrong’ and to be condoned accordingly.

In short, the way in which tourism development is managed in these two countries over the next few years (and time is urgent) will determine whether the environmental catastrophe predicted and feared by many of the Sahara’s local communities, and already under way, will be avoided.

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<sup>iii</sup> Conference on the Natural Resources and Cultural Heritage of the Libyan Desert. Tripoli, Libya. 15-20 December, 2002.

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- <sup>iv</sup> My reference to ‘antiquities’ is restricted primarily to pre- and proto-historic rock art, lithic scatterings, certain funereal and other stone monuments and associated archaeological sites and formations.
- <sup>v</sup> Coulson, D. 1999.
- <sup>vi</sup> The precise number of artefacts looted from the Sahara is obviously not known. The figure is certainly in millions. For example, it is generally estimated that some 2 million artefacts have been looted from the Tassili region of Algeria alone.
- <sup>vii</sup> Barnett, T. 2003.
- <sup>viii</sup> Keenan, J. 2000, 2002.
- <sup>ix</sup> The painting concerned is the ‘Great God’ of Sefar. (For picture, see Keenan 2000, 288).
- <sup>x</sup> See the expedition’s book, Castiglioni 1986.
- <sup>xi</sup> Keenan, J. 2002.
- <sup>xii</sup> This was mentioned at the Conference. It was subsequently discovered that the main German looter currently operating in the Sahara made two visits to Libya in the month following the conference, one into the Ubari area and one further south towards Tibesti.
- <sup>xiii</sup> Kelly, S. 2002, 67.
- <sup>xiv</sup> *ibid.* 76-7
- <sup>xv</sup> Keenan, J. 2002, 143.
- <sup>xvi</sup> For a more detailed account of Lhote’s contribution to our knowledge and understanding of Saharan prehistory, see Keenan, J. 2002.
- <sup>xvii</sup> Brooks, N. et al. 2003 and personal communication.
- <sup>xviii</sup> Anag, G. et al 2002.
- <sup>xix</sup> In some parts of the Sahara, notably Niger, hijacks of tourist have been ascribed to competing tourism agencies trying to embarrass each other.
- <sup>xx</sup> *Ibid.*
- <sup>xxi</sup> Tourism to Libya was effectively restricted by the embargo until the latter 1990s, while tourism to Algeria ceased almost entirely between 1992 and 1999 as a result of the country’s ‘civil war’ that followed the army’s annulment of the 1992 election results.
- <sup>xxii</sup> Masc. sing. *chinoui*; masc. pl. *chnaoui*; fem. sing. *chinouia* or *chinouiette*; fem. pl. *chnaouia* or *chnaouiat (ettes)*.

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<sup>xxiii</sup> The Foundation was established by Algeria's Minister of the Environment in December 2002. Its main office is in Ghardaia (Algeria). The author is a Founder Board Member.