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Climate Change, Water Scarcity, Sustainability and Adventure Travel in Brazil, the Russian Federation, India, China & Mexico ("BRICM")

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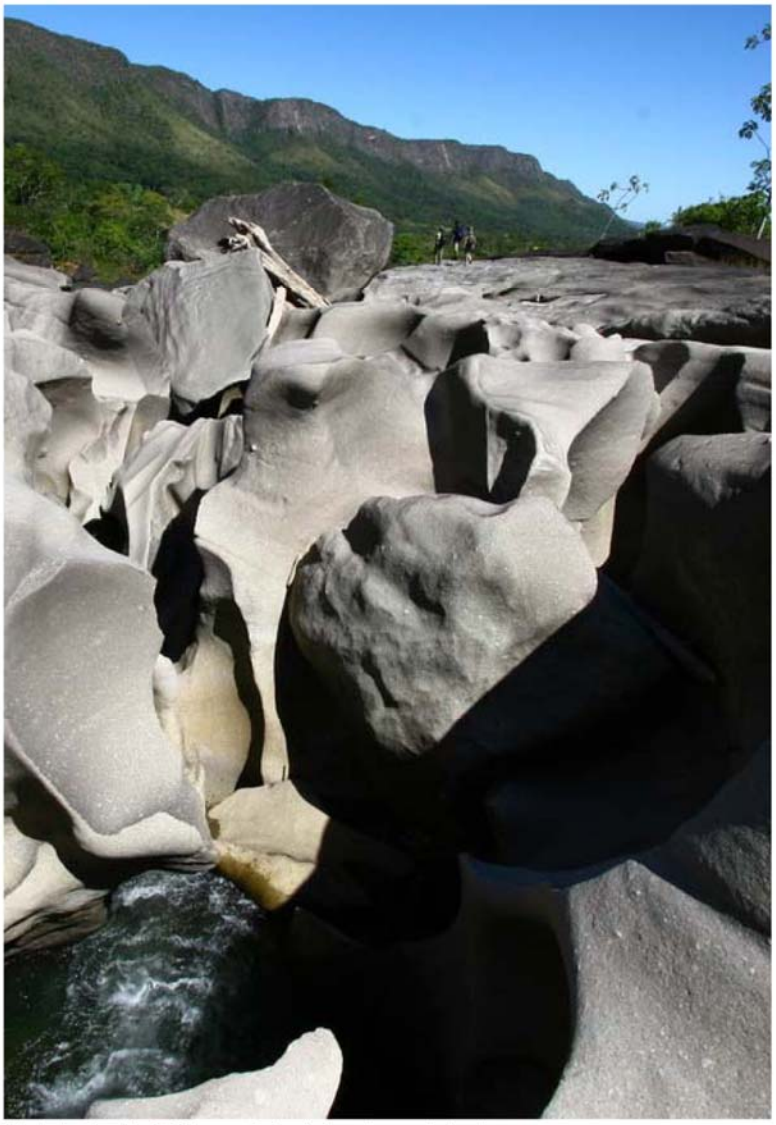

Photo by Ion David, Travessia Ecoturiso, travessia.tur.br

Acknowledgements and Contact Information

This report was authored by Henrietta de Veer and edited by Christina Heyniger; it is produced solely by the Xola Consulting, Inc. team and is not sponsored by individual adventure industry companies nor by the national governments or tourism boards of the countries discussed in this report.

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Xola Consulting, Inc. (xolaconsulting.com) is a consulting and research services firm assisting tour operators, tourism boards and non-profit organizations with sustainable adventure tourism destination and product development, marketing and research. Xola launched *Off the Radar* (travelofftheradar.com) in 2005 to provide travelers with information about the best entrepreneurial adventure operators around the world – those who provide guests with a genuine, personal experience; who believe in sustainable, environmentally sensitive travel; and who believe in incorporating the local people and traditions of the places where they operate.

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Climate Change, Water Scarcity, Sustainability and Adventure Travel in Brazil, the Russian Federation, India, China & Mexico ("BRICM")

Overview

The issues and trends discussed in the 2009 Adventure Industry Research Roundup show a picture of growing complexity: there is so much happening on a global basis, with rapidly converging trends affecting a wide range of economies, industries and population groups around the world. Nowhere is it seen more starkly than in travel and tourism, an industry operating at the intersection of multiple industries and markets.

To complement the 2009 Roundup, we offer the following analyses of specific countries that represent both rapidly emerging destinations for adventure tourism as well as sources for the next generation of travelers. We also provide snapshots of how adventure tourism is evolving on the ground in key regions of the world in a time of rapidly increasing concerns on climate change and water scarcity.

We have focused on the BRICMs (Brazil, the Russian Federation, India, China and Mexico), clearly emerging rapidly on a global basis economically but also providing interesting comparisons across many criteria, which will have implications not only for how adventure travel will evolve and develop in each of the countries but also for how each country's consumers will become the next generation of adventure travelers.

All five of the countries are facing significant challenges from climate change, hydrological variability and resulting water stress. Broadly speaking, over the last year, there has been progress amongst the BRICM countries, with all developing plans to reduce emissions: In particular, Mexico with recently set stringent emissions reductions, China focused on the implementation of energy efficiency targets, and Brazil with goals to reduce deforestation.

However, though their views appear to be moderating, Brazil, India and China in particular have to date been outspoken in their views that the developed world must take dramatic steps to cut emissions ahead of the developing world and also bear the costs of climate-change mitigation and adaptation strategies adopted by the developing world going forward. At the present time, Brazil, India and China will not sign agreements that set mandatory emissions-reduction targets.

In terms of climate change mitigation and adaptation efforts, Mexico is leading the way, with China second, while Brazil and India have, surprisingly, not been as proactive.

In a break with the rest of the BRICMs, Mexico has come out with a very ambitious program to cut emissions in half by mid-century and to move quickly toward a low-carbon economy. Mexico has also put forward a plan for a global climate-change mitigation and adaptation fund. These moves put the country in a strong position to be a leader in the climate-change debate over the coming years.

China is less developed in its strategy, but it has put forward a plan that, if implemented, could slow emissions growth substantially.

Brazil has historically had the position of being a leader in the climate-change debate. It uses a great deal of hydropower, a renewable source of energy, and ethanol is a major driver of its transportation sector. However, the continuing deforestation of the Amazon basin has had a negative impact on its reputation. There are ambitious plans in place to reduce the rate of deforestation, but there is some skepticism that this will be easy to implement.

India is in a different category from the others, with much lower per-capita emissions and lower economic capacity. India also has a plan to address climate change and water-scarcity issues. Although weaker than any of the other BRICMs, if implemented, it should help reduce emissions.

Interestingly, not one of the countries, including Mexico, which is very dependent on the tourism industry, has developed climate-change plans and policies that address a specific sector such as tourism. All, except Russia, have active approaches to developing their tourism sectors (though to varying degrees) and are involved in sustainability efforts but, to date, they have not been linked to the tourism sector. This is an area in which the adventure tourism industry can shine, offering solutions to help lessen the carbon and water footprints of the tourism industry.

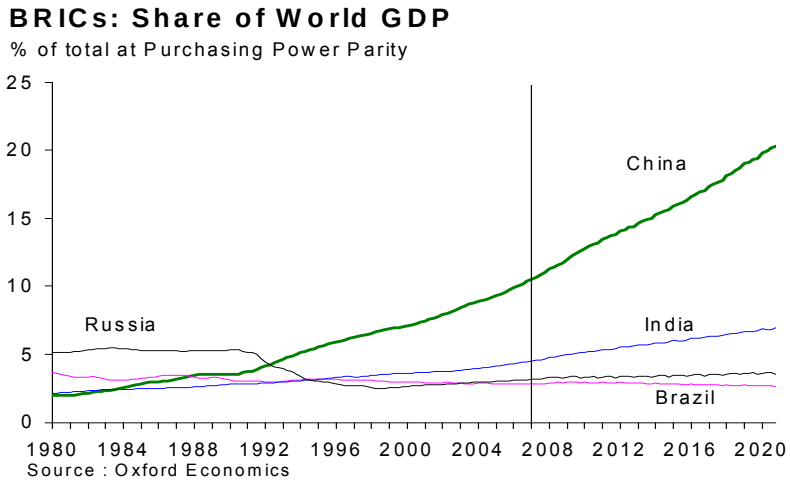
Most industry observers agree that, over the next decade, global tourism growth will come from the BRICMs. Therefore, we urge other countries seeking to build and diversify source markets and improve their economies to shape their tourism policies around the creation of tourism demand from these rapidly emerging countries. The following analyses will demonstrate that each of the BRICM countries have populations who are fast becoming avid tourists, and we expect that the demand cycle from mass to specialty and adventure-travel products to escalate at a much more rapid rate than experienced by developed countries over the last thirty years.

The BRIC/BRICM Thesis

Over the last number of years, various analysts and economists have extended the term BRIC to include “BRICM” (M for Mexico). Other variations include “BRICK” (K for Korea); “BRICS” (S for South Africa); “BRICA” (GCC Arab countries – Saudi Arabia, Qatar, Kuwait, Bahrain, and UAE); and “BRICET” (including Eastern Europe and Turkey). All of these terms are being used to refer to rapidly growing, emerging markets. For the purposes of this report, we chose to include Mexico because we think it an interesting extension of our discussion on adventure tourism in developing economies, particularly in terms of the similarities and contrasts with and between the five BRICM countries.

The BRIC term was coined in 2002 by Jim O’Neill, chief economist of Goldman Sachs, and his group to make predictions about the speed of economic growth of the four biggest emerging markets at the time. The group predicted that the four countries’ GDP would comprise more than 10% of global output by the end of the decade, a milestone which was comfortably surpassed in 2008 when it reached approximately 15% of the total. He recently stated that he thought that the combined BRIC GDP would overtake the G7’s by 2027, with China’s GDP overtaking the U.S. at about the same time.

Oxford Economics provides the following data available on the BRIC’s share of the global economy as of 2008 as well as projections for the future. As one can see, Oxford predicts that the long-term prospects are still very positive for the BRICs and other emerging markets, though China clearly will have an increasingly dominant role amongst the group of four:



In a recent interview on July 27th, 2009 in the Financial Times where he updates his views on the BRICs as well as emerging markets in general, Mr. O'Neill makes several important points:

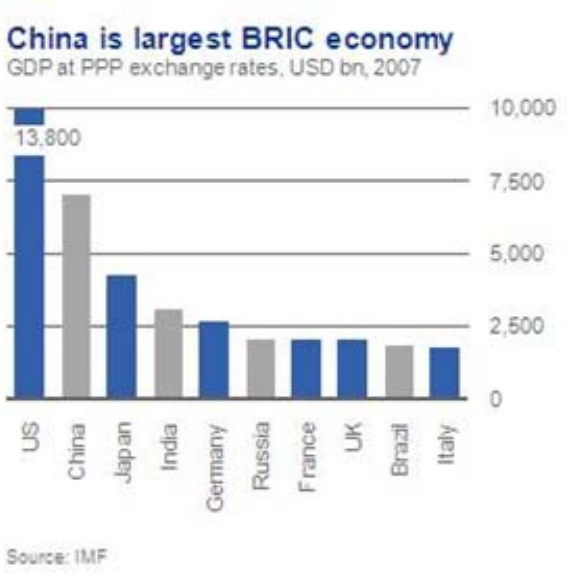
- He no longer views the BRICs as "emerging" since he believes that they are too large for that designation. He also feels that, in general, all four countries have strong fundamentals, with government ownership of banks being a primary factor in the stability and rapid recovery of their economies; and

- His team's research has identified what he believes to be the next group of countries that, though dissimilar, could take up the BRIC mantle as new engines of growth: Turkey, Mexico, Nigeria, Iran, Indonesia and Vietnam.

The four BRIC countries have approximately 40% of the world's population and are spread out over three continents, accounting for over 15% of the world's $60.7 trillion economy. However, while their contributions to global growth are set to increase over the next decade, these nations are significantly different from one another, and forging common positions and approaches to world issues may be very difficult. China and India are expected to be among a very few countries that will grow at or above 5% in 2009, contributing the bulk of global growth even as the advanced economies generally remain in recessionary territory as discussed in the first chapter.

There are currently significant differences amongst the BRICMs in terms of economic performance. Numerous economists and financial analysts believe that China has already surpassed the other three BRIC countries and that its potential is still far greater than theirs. A member of the board of the China Construction Bank has expressed the view that China has left Brazil, Russia and India behind and that those countries would be better matched with Mexico to form the "BRIM" group.

Deutsche Bank Research economist Markus Jaeger states that, while the growing importance of India, Brazil and Russia will have important consequences, he believes that they simply do not come close to comparing with China's rise: China's economy is larger than of the three other BRICs combined and is growing faster, with its official foreign-exchange reserves more than twice as large as the other three combined. In addition, China's increasing economic and political weight in world affairs is a reality, and its influence is continuing to rise rapidly.



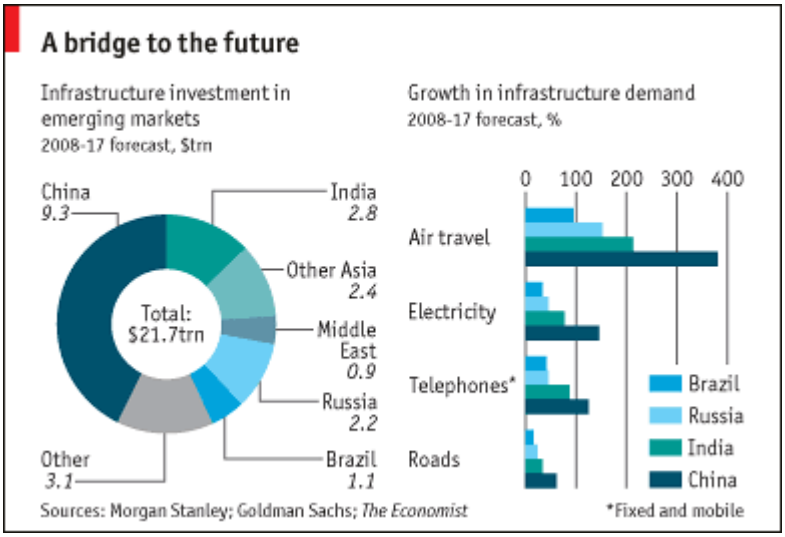
In addition, China has outperformed the other three BRICS by a wide margin over the last thirty years. Deutsche Bank Research states: "Over the last decade, China's real GDP growth averaged 10% compared to 7% in both India and Russia and 3.3% in Brazil. China's high savings rate, a low level of urbanization, low per-capita income (with considerable "catch-up" potential) and, importantly, a successful export-oriented, manufacturing-based development strategy underpinned by strong investment in infrastructure and education, will combine to sustain China's superior economic performance."

Finally, Mr. Jaeger notes that, in terms of trade openness, China is the most highly integrated economy among the BRICs. Chinese merchandise trade (both exports and imports of merchandise) amounts to two thirds of its GDP compared with one half in Russia, one third in India and a mere one fifth in Brazil. While it remains closed relative to the other BRICs in terms of its foreign portfolio investment, China has been receiving large FDI inflows over the last decade (in fact, by far the largest of emerging markets), and its external assets amounted to a US$2.3 trillion in 2007 (and have grown steadily since). China now is the single largest holder of foreign-exchange ("FX") reserves and U.S. government debt securities.

Infrastructure Investment Trends with an Impact on Tourism

It is worth looking at another trend that may have a large impact on how tourism develops in the BRICMs, and what priorities are placed on various sectors of each country's economy: infrastructure investment. The following chart was produced from analyses by Morgan Stanley, Goldman Sachs and *the Economist,* which is projecting massive infrastructure-development spending around the world, most particularly in the BRICs. Of the $22 trillion to be spent over the next ten years, China, which is already spending 12% of GDP on infrastructure, will account for

43% of the total. In fact, China has spent more in real terms in the past five years than in the whole of the 20th century. In 2007, Brazil launched a four-year plan to spend $300 billion to modernize its road network, power plants and ports. The Indian government's latest five-year plan has set nearly $500 billion in infrastructure projects. Russia, the Gulf states and other oil exporters are all putting in place plans to spend their oil revenues on various fixed-asset investments.



Even with adventure travel's reduced need for hard infrastructure, there is no doubt that countries need a basic access infrastructure to reap the potential economic-development gains of tourism. Even adventure-travel tourists who might "rough it" a bit to experience a remote destination frequently cannot afford the additional time to get to and from a destination if it is too complicated and takes too long. As we noted in the 2009 Research Roundup, the number of days individuals are able to, and actually do take, by country varies greatly, and destinations and tour operators need to take this into account, along with access issues, when planning itineraries.

Infrastructure investment is not only an input to economic growth plans, but also becomes a consequence of growth: a positive feedback loop emerges in which investment encourages more investment. As people become more affluent and more urbanized, they demand more electricity, better transportation, water, sanitation, and other hallmarks of the global middle class. And they expect to be able to travel within their own country as well as between countries. As is seen from the above chart, air travel and roads will be major beneficiaries of infrastructure investment over the next ten years.

We also mention these substantial increases in investments because of climate-change and water-scarcity issues which will need to be addressed over the short- to medium-term. Depending

on how the tourism industry responds with effective solutions, they might either be left out of the economic-development discussion completely or be viewed as leading the way in a positive fashion to sustainable tourism investments that make sense and contribute to healthy economic development over the longer term. We strongly believe that the adventure-tourism industry has a major role in these discussions and in coming up with sustainable, workable solutions.

Climate Change and the BRICMs

The developed world is largely responsible for the current global carbon footprint ("CF"). In simplistic terms, the improvement in standards of living and the emergence of affluent societies in developed countries over the last century have in many ways been the cause of where we are today. There is also no question that, as the global middle class emerges and demands improved living standards and the trappings of a more affluent lifestyle, the contributions of developing economies to that world carbon footprint will dwarf the developed world's contribution to date primarily because of the sheer sizes of the populations involved.

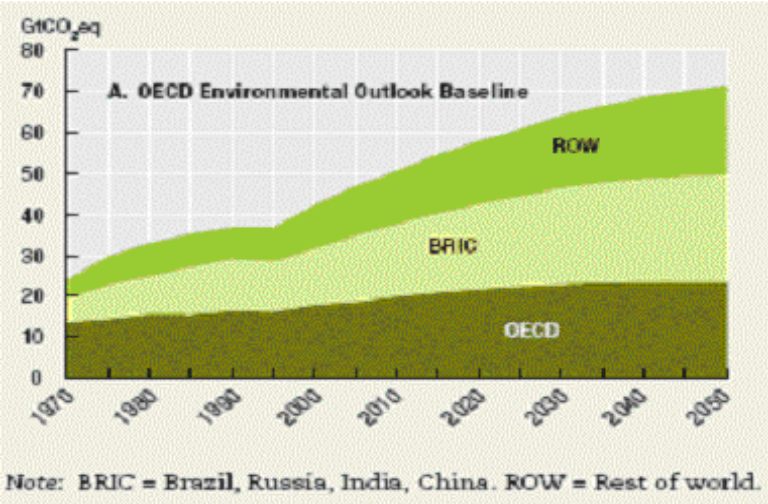
The amount of greenhouse gases an economy emits is generally determined by three factors – population, gross domestic product and something that is referred to as "carbon intensity." All else being equal, a higher population emits more than a smaller population, and a bigger economy emits more than a smaller economy, generally because the use of energy is what generates most economic activity, which is in turn a key contributor to the level of carbon emissions. However, if a large- population, high-GDP economy is able to reduce the amount of greenhouse gases ("GHG") it emits per unit of energy (in other words, it is able to reduce its carbon intensity), then it will be able to reduce its total emissions.

The obvious problem with this is, if that country grows at a faster rate than the rate of reduction in its carbon intensity, total carbon emissions will still keep growing. As an example, America's emissions' intensity declined 54% between 1960 and 2005, yet overall emissions doubled because the population grew and per-capita GDP increased by 169%. The real challenge then is, for countries in today's world, to reduce carbon intensity at a much faster rate than population and GDP growth, something which has never been done before.

As a general principle, those countries with the highest projected rates of economic growth and energy consumption are most likely to increase their GHG emissions at the fastest rates. Brazil, Russia, India and China are all expected to have growth rates well above those for countries in

the developed world. In addition, the sheer population bases of China and India, by definition, will propel emissions to grow at an even faster rate. These trends have been presented graphically

by OECD below. The graph shows that the BRIC countries' share of total global emissions rises, as does the Rest of the World's ("ROW"), while the OECD's share de-accelerates and essentially flattens by 2030:



The high-growth emerging countries we are focused on reflect significant regional, economic, demographic, cultural and energy resource diversity, which will obviously have implications on how each of them chooses to develop and implement mitigation and adaptation strategies to climate change and water scarcity. India and China are two of the most populous nations, Russia is a major oil exporter, and Brazil has the largest expanse of tropical rainforest as examples of differences. Mexico is home of 10 – 12% of the world's biodiversity. While they all, except Mexico, have been reluctant to sign agreements that commit them to emissions-reduction targets, they are increasingly aware of the repercussions that will occur on their economies if actions are not taken now to reduce emissions and solve water-scarcity issues.

Going forward, the most promising approaches are ones that capitalize and leverage natural synergies between climate protection and development priorities in order to simultaneously advance both goals. Tourism could be one of the few industries where the two goals are met as a natural outgrowth of a sustainable development strategy.

Again, the adventure-tourism industry in particular has a direct and critically important role to play in the global climate-change conversation by encouraging all participants in its value chain to continue to emphasize sustainability in all of their business practices and to engage communities, governments, NGOs, and destination managers to formulate

and implement policies that concretely will have a positive impact on the environment as well as on the lives and livelihoods of the people who live in it.

The following graph is a snapshot of the status of each of the BRICM country's carbon and water footprints. Each has unique footprints that will require tailored solutions. GHG emissions come from different sources in terms of relative importance; water usage varies, in some cases fairly dramatically, by sector of the economy; and the effects of climate change and water scarcity will be felt differently in significant ways, leading to markedly different approaches to mitigation and adaptation strategies. In the following country discussions, we will briefly point out some of the ways these issues are unfolding in each country.

KEY EMISSIONS, ENERGY AND WATER USAGE INDICATORS

	Pop. 2008	GHG Intensity of Economy (2005) (tCO2/M Int!$) - CAIT	Emissions Per Capita (tCO2 eq./cap)	Past Emissions Trend 1990-2006 % Change	CO2 per kWh of elec.	% Increase in Share of Renewable Energy Sources	Water Footprint (m3/capita/yr)	% of Footprint Falling Outside of Country	Renewable Freshwater Resources (km^3/yr)	Freshwater Withdrawals (km^3/yr)	% Dom. Use	% Ind. Use	% Agri. Use
Brazil	192.0	222.4	5	47.3%	85	-3.8%	1,381	8.0%	8,233.0	59.3	20%	18%	62%
Russia	141.8	923.5	16	-33.9%	333	0.4%	1,858	16.0%	4,498.0	76.7	19%	63%	18%
India	1,140.0	500.5	2	78.2%	944	-13.5%	980	2.0%	1,907.8	645.8	8%	5%	86%
China	1,325.6	1,045.8	6	116.1%	846	-10.1%	702	7.0%	2,829.6	549.8	7%	26%	68%
Mexico	106.3	349.7	6	42.3%	500	-1.8%	1,441	30.0%	457.2	78.2	17%	5%	77%

China has the highest GHG intensity of any of the targeted countries, with Russia a close second and Brazil the lowest of the group. Russia stands out in terms of emissions per capita. In terms of growth trends, however, Russia improved its GHG intensity between 1990 and 2006, though it is now increasing again. As noted above, all other countries have exhibited rapid growth rates, most particularly China since it was from a higher base. Of the BRICMs, no country is doing well in terms of increasing renewable energy sources as a share of total, primarily because total energy usage is growing so rapidly.

The water footprint of a nation shows the water that is used to produce the goods and services consumed by the inhabitants of that nation. It includes two components: the internal and the external water footprint. The internal component refers to the appropriation of domestic water resources; the latter to the appropriation of water resources in other countries (in other words, where goods and services are produced in other countries and then imported to and used in other countries). For example, about 30% of Mexico's total water footprint comes from external sources, while only 2% of the Indian water footprint falls outside the country.

As we will see from the below analyses, while countries such as Brazil and Russia have plenty of renewable freshwater resources, they both have water-scarcity issues between and within regions because of the skewed distribution of water resources across these nations. This variation of water resources within countries will become magnified through the effects of climate change.

Overview of Tourism and the BRICMs

All of the BRICMs are large countries in terms of geographic area: The Russian Federation (Russia) #1 in the world; China #4; Brazil #5; India #7; and Mexico #13. Population bases vary widely from a low of 106.3 million in Mexico to a high of 1,325.6 billion in China. While China's and India's GDPs are growing rapidly, per capita GDP is still low for both countries when compared to the others in this group. The scale of their opportunities, as well as challenges, is also much larger.

The tourism industry is developing very differently in each of the BRICM countries not only as destination countries but also as sources of both international and domestic tourists. The following chart is a snapshot of some of the differences we found between the countries. We will go into more detail about each country's tourism industry, with a focus on adventure travel, in each of the following country discussions.

Country	Area (Sq. Miles)	2008 Population (MM)	2008 GDP, PPP ($ in MM)	2008 GDP Per Capita, PPP (US$)	2008 # of Arrvls (MM)	% Chge 2007 - 2008	YTD % Chge 2008 - 2009 (over same period last year)	Av. Exps. Per Arr. Tourist 2008	Exps. Per Arr. Tourist % Chge 2007 - 2008	Arr. Tourist Exps. % Share of GDP (2007)	Balance of Trade % (Trav. Recs./ Trav. Pymts)	Tourist Exps. % Share of Exports of Services (2007)	# of 2007 Deps % of Total Pop. 2008	Av. Exps. Per Dep. Tourist 2007 ($ in MM)	# of Dom. Overnite Stays 2007 (MM)
Brazil	8,514.9	192.0	$1,976.6	$10,296	5.1	0.5%	N/A	$1,137	13.7%	0.4%	70.7%	22.1%	2.7%	$1,608	0.6
Russian Fed.	17,098.2	141.8	$2,288.4	$16,139	22.9	1.8%	-10.8%	$520	21.8%	1.0%	124.0%	32.0%	24.2%	$720	44.3
India	3,287.3	1,140.0	$3,388.5	$2,972	5.4	5.6%	-10.6%	$2,185	4.2%	1.0%	159.5%	11.8%	0.9%	$755	N/A
China	9,632.0	1,325.6	$7,903.2	$5,962	53.0	-3.1%	-9.0%	$770	13.2%	1.3%	136.9%	33.7%	3.1%	$727	435.8
Mexico	2,964.4	106.3	$1,541.6	$14,495	22.6	5.9%	5.9%	$588	-2.5%	1.6%	158.3%	79.3%	14.2%	$556	74.6

In terms of the number of arrivals, Brazil (5.1 million in 2008) and India (5.4 million 2008) received almost exactly the same number of tourists, with India experiencing between 2007 and 2008 much better growth rates as well as considerably higher expenditures per arriving tourist than Brazil. Russia (22.9 million in 2008) and Mexico (22.6 million in 2008) also had very similar results, with both being dominated by regional traveler arrivals. China had more than double the number of arriving tourists than either Mexico or Russia (when Hong Kong and Macao are removed from the total).

Four of the countries experienced positive growth rates between 2007 and 2008: Brazil 0.5%; Russia 1.8%; India 5.6%; and Mexico 5.9%. Clearly, Brazil and Russia started experiencing the results of the recession much sooner than India or Mexico, which was reflected in their results. For YTD changes 2008 to 2009, the only growth was experienced by Mexico (though results for the months of March, April and May 2009 were all down because of the swine flu scare, so January and February results were strong enough to show growth rates for the total period of January through May 2009). There were contractions of between 9% and almost 11% for Russia, India and China for arriving tourists, with Brazil not reporting any results for the this year to date.

The data on expenditures per arriving tourist reveal that, of the BRICM countries, tourists spend the most in India by a wide margin, followed by Brazil. Russia has the lowest expenditures per arriving tourist but the highest expenditure growth rates between 2007 and 2008. China and Brazil also had substantial increases in expenditures per arriving tourist, well above the numbers of arriving tourists, which were up in Brazil but down in China. Even though Mexico had increases in the number of arriving tourists between 2008 and 2009, expenditures per tourist dropped.

Tourism in all five of the countries as a percent of GDP is still very low by any measure, indicating considerable room for sector growth. As a percent of export services, tourism in India is the lowest at 11.8% and highest in Mexico at 79.3%. In terms of tourism's balance of trade ratio (the amount of expenditures spent by arriving tourists over the amount spent by outbound tourists), Brazil is the only country where outgoing tourists spend more than incoming tourists.

Interestingly, Brazilians spend more money per departing tourist by far than any of the departing tourists of the other BRICMs. As a percent of their own population base, however, Russians and Mexicans are the most active travelers, and while those Brazilians who do travel spend significant amounts of money, only a small percentage of them are currently traveling, which is the same for travelers from India and China. This serves to emphasize that there is tremendous room for growth of outbound tourists from Brazil, India and China.

The domestic tourism industry is emerging rapidly in each of the countries (though data provided by UNWTO shows a small domestic tourism industry in Brazil. Other data provided by Brazil directly reveal a different story, as discussed in the Brazil section). Just as we discussed in a previous chapter, UNWTO does not collect domestic-tourism data for many countries, including the U.S., which we found independently has a very large domestic tourism industry, representing 1.6 billion person-trips last year alone. As a result, we have less confidence in the comparability of trends between the BRICMs than with other of the data. Domestic tourism would be a very

interesting area to explore in the future since these countries are large geographically and highly diverse and offer many attractive alternatives not only to international tourists but to their own populations.

Destination Performance Measurement and the BRICMs

In any industry, tracking performance is important. Understanding the reasons behind successes and failures supports the formulation of strategy, the allocation of budget and the evolution of products and services. The following discussion is excerpted from a chapter in Xola's 2009 Annual Research Roundup and focuses on the relative performances of the five countries based on the Adventure Travel Trade Association ("ATTA") and George Washington University ("GWU")'s Adventure Tourism Development Index ("ATDI"), launched in 2008. (Xola Consulting advanced the ATDI's "10 Pillars of Adventure Tourism Competitiveness"; in 2008 GW developed the technical methodology for ranking countries.)

The ATDI offers a ranking of 195 countries around the world based on principles of sustainable adventure tourism and is calculated through a combination of survey data of adventure-travel experts from around the world and quantitative data gathered from various international indices.

This benchmarking tool is intended to support entrepreneurs and governments that want to develop and market sustainable adventure tourism products and services. It uses a broad definition of adventure travel, based on how consumers themselves define adventure - as a blend of physical activity, nature exploration, and cultural education/experience. The ATDI gauges the potential of a country to host an adventure travel market and examines ten factors (10 Pillars of Adventure Market Competitiveness), which include a range of indicators organized in three main categories:

1. Safe and Welcoming (sustainable development, safety, natural resources, and health);
2. Readiness (humanitarian support, infrastructure, cultural resources, and image); and
3. Adventure (entrepreneurship and adventure-activity resources).

Within these three categories, specific scores for individual criteria are added together (e.g., if a country is ranked first in each of the 3 categories, it will have a total score of three, and will thus be ranked the best country overall). In this way, a specific country is able to compensate for a low ranking in one category by a higher one in another.

It should be kept in mind that the ATDI is still evolving. As an example, the methodology used for the ATDI 2009 index was augmented from the 2008 index to incorporate suggestions by the ATDI Advisory Board in order to reflect most accurately the experiences, expectations and priorities of

adventure travelers in order to improve destination performance measurement. As a result, there were some significant changes in country rankings in the both the developed and developing country indices as presented below. (For the full ATDI report and explanation, visit www.adventureindex.travel.)

The methodological changes described above can explain some key changes in country rankings between 2008 and 2009 shown below.

Developing Countries

	2009	2008
1.	**Slovak Republic**	**Estonia**
2.	**Israel**	**Chile**
3.	**Czech Republic**	**Slovak Republic**
4.	**Estonia**	**Czech Republic**
5.	**Slovenia**	**Hungary**
6.	**Chile**	**Botswana**
7.	**Bulgaria**	**Bulgaria**
8.	**Latvia**	**Jordan**
9.	**Botswana**	**Latvia**
10.	**Lithuania**	**Uruguay**

Developed Countries

	2009	2008
1.	**Iceland**	**Switzerland**
2.	**Switzerland**	**Sweden**
3.	**New Zealand**	**New Zealand**
4.	**United Kingdom**	**United Kingdom**
5.	**Australia**	**Spain**
6.	**Luxembourg**	**United States**
7.	**Denmark**	**Norway**
8.	**Ireland**	**Germany**
9.	**Germany**	**Iceland**
10.	**Spain**	**France**

A comparison of the 2009 and 2008 rankings reveals that, in the developing countries category, three new countries entered the top ten to replace three that fell off the list. For the developed countries category, four countries did likewise. Both of last year's number ones relinquished their top spot.

In both indices, a lot of movement was relatively minor, with countries gaining or losing a few spots. However, in the developing country index, some significant moves stand out. Israel's 9-spot gain and Slovenia's 10-spot gain pushed them both into the top ten, Israel all the way up to number 2. Meanwhile, Hungary and Uruguay dropped 7 and 8 spots, respectively, dropping out of the top ten. Egypt and Bhutan were the biggest movers from 2008 to 2009, although neither

reached the top ten. Egypt moved up 19 spots and Bhutan an impressive 56 spots, from 78th to 22nd.

In the developed countries index, Australia, Denmark, and Ireland posted big gains, moving up 12, 15, and 15 spots, respectively. All three made it into the top ten. The biggest drops were seen in the scores of Sweden and the United States, dropping 15 and 18 spots, respectively, both moving out of the top 10 and the U.S. out of the top 20. Countries that do well in the ATDI but are not yet popular with adventure travelers might consider emphasizing nature and adventure product development and marketing.

The BRICMs: How do they stack up and what happened between 2008 and 2009?

The following chart shows the 2009 ATDI scores for the BRICM countries in each of the 10 pillars. Each criterion is awarded a score from 1 to 10.

ATDI BRICM SCORES 2009													
	Safe and Welcoming Criteria					Adventure Criteria			Readiness				
Country	Sust. Dev.	Sfty	Hlth	Nat. Res.	TOTAL	Adv. Res.	Entre prnrshp	TOTAL	Cult. Res.	Humanit.	Infrastr.	Image	TOTAL
Brazil	8.26	5.74	2.91	7.23	24.14	4.88	6.67	11.55	7.26	4.63	5.04	6.93	23.86
Russia	8.41	4.77	6.04	7.73	26.95	7.15	6.08	13.23	7.41	3.46	7.57	8.81	27.25
India	6.66	5.33	1.99	5.44	19.42	5.60	6.44	12.04	7.77	4.56	8.85	9.46	30.64
China	6.54	6.42	2.39	6.29	21.64	6.03	6.32	12.35	8.69	4.52	7.57	9.09	29.87
Mexico	8.55	5.81	2.42	6.98	23.77	5.22	7.58	12.80	6.97	4.68	4.77	7.91	24.33

The only BRICM country to be in the “A” grouping for both 2008 and 2009 is Russia at #24 in the overall 2009 ranking. The rest of the countries are all in group B and earned average ratings: China (#55 in terms of its overall ranking); Mexico (#56); Brazil (#69); and India (#87).

Climate Change and Water Scarcity Profile: Emerging Adventure-Travel Industries in the BRICMs

The following country profiles provide a brief look at how the tourism sector in each of these important emerging economies is beginning to deal with the effects of climate-change and demands on their water infrastructure. It offers a framework for examining how the global tourism industry begins to work together to provide solutions for the development of a long-term strategy to ensure the sustainable health and survival of the tourism industry, most particularly the adventure-travel segment.

Overlooking the Saco do Mamanguá - Pão de Açucar in Brazil. Photo courtesy CiAEco; ciaecoturismo.com.br

Brazil

Overview

Brazil occupies nearly 50% of the South American continent and is the world's fifth largest country, slightly smaller than the U.S. It is blessed with many abundant natural resources, a diversified and growing economy, a stable democracy and is largely unthreatened by social, demographic or economic upheavals. It is also the only region in the world currently free of earthquakes, hurricanes, and tsunamis.

Brazil controls a great deal of the world's most basic resources:

- It has the largest farmable area in the world at 22%;
- It has 33% of the world's forests, with 57.2% of its land area forested;
- It has 12% to 15% of the world's freshwater resources;
- It is the largest producer of coffee, oranges, and sugar cane; it is the second largest producer of manioc, beans, soy, beef and chicken; it is the third largest producer of sugar and corn; and it is in the top 10 for grains, eggs, pork, cotton and rice.

Brazil is currently the biofuels leader in the world, and no other industrialized country emits less CO2 to produce energy than Brazil. It has built an impressive renewable energy industry; around 80% of all new cars sold in Brazil have "flex-fuel" engines (which means that they can run on gasoline, ethanol, or a combination of both); and its sugar cane-based ethanol fuel is in process of becoming one of the country's key exports.

Brazil has also built its energy use around renewable hydroelectric power (though some are concerned about the massive build-up of large-scale dams and the related environmental impacts). Its 450 hydroelectric dams produce over 83% of the country's electricity. Brazil is the world's third largest producer of hydroelectricity, behind China and Canada. The country also has a commitment to expand its use of biomass plants, wind turbines, and solar-water heating systems to further reduce its reliance on fossil fuels.

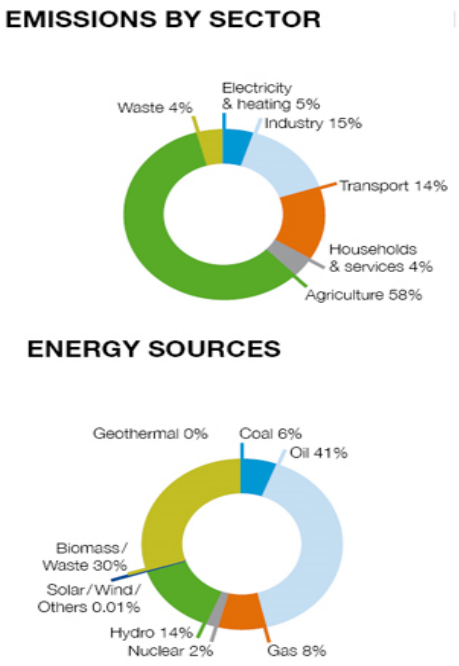
Brazil has enormous capacity to grow as measured by a large domestic market with relatively high per-capita consumption. Many economists believe that Brazil has the potential to subsidize private and public investments by 5 to 10 percentage points of GDP on a permanent basis. It also is well-positioned to attract a large share of global capital flows in the future. (RGE Monitor

Newsletter, July 16th, 2009). The combination of favorable policies, economic stability, and credit-rating upgrades has increased the country's access to capital while decreasing its capital cost.

However, it is the world's eighth largest emitter, and unlike most developed and many developed countries, unsustainable land use and deforestation contribute the most to total emissions, accounting for more than 75% of the country's total. While Brazil is considered the birthplace of international cooperation on climate change fifteen years ago when the UN Earth Summit took place, it is still losing miles of rainforest every day. This is huge issue for Brazil since the Amazon River basin is viewed as critical to the Earth's life-supporting carbon cycle and has actually been called the "lungs of the world." NASA, along with the Hadley Centre in Britain, a major, worldwide climate-change research organization, estimate that up to 85% of Brazil's forest could be lost with a 4º C rise in global temperature if spiraling greenhouse emissions are not brought under control. Even under the most optimistic climate-change scenarios, however, the group estimates that the destruction of large parts of the forest is "irreversible," even with a 2º C rise in global temperature.

The country has an overall increasing emissions trend, though not as great as India's and China's but comparable to Mexico; a high emissions rate per GDP but low per capita; and a low emissions rate for electricity generation because of its large share of renewable energy source usage (hydropower). Emissions from deforestation and agriculture comprise the largest share of total Brazil's GHG emissions.

The following graphic is a snapshot of Brazil's climate-change profile (Allianz):



Brazil's Vulnerability to Climate Change

In spite of having the largest access to freshwater resources in the world, Brazil also has a number of problems with their distribution within the country. In addition, the ecosystem is fragile and highly dependent on the climate for renewability, so climate change will affect a wide range of climate patterns, including rainfall and other natural events, which will have ripple effects throughout the economy. The following discusses some of the changes expected to occur as a result of climate change over the coming decades.

Threatened Forests and Loss of Wetlands and Biodiversity

As we observed before, climate change will first exhibit itself in changing rainfall patterns and varying degrees of water-scarcity and drought around the world. Experts predict that higher world-wide temperatures will reduce rainfall in the Amazon region, which will cause widespread local drought. With less water and tree growth, "homegrown" rainfall produced by the forest will be reduced as well, as it depends on water passed into the atmosphere above the forests by the trees.

Photo by Ion David; travessia.tur.br/eng

An example of this is that a large percentage of the rainfall south of the Amazon (e.g., in Mato Grosso and Sao Paulo states) originates in the Amazon River basin. Thus, preservation of the rainforest is not only important for the reduction of carbon emissions; it is important for maintaining the biodiversity as well as supporting the large-scale agriculture and hydroelectric facilities south of the Amazon basin that depend on the "rain machine" of the Amazon. This trend will clearly have an impact on the country's dependence on hydroelectric power. In addition, the Amazon is home to approximately one third of the world's known plant and animal species, thousands of which are unique to the region. They too will be affected by these climate shifts.

While deforestation rates in the Amazon slowed to around half between 2004 and 2007, USAID has recently expressed concern that figures for the first half of 2007 showed a rapid increase in deforestation, with 2007/2008 deforestation rates predicted to rise by at least 22% compared to the year before. The major deforestation areas are being observed in the States of Mato Grosso and Park, where the main economic-growth activities are soy planting and cattle ranching.

Climate models are predicting that, if nothing is done to halt global warning, most of Brazil will experience temperatures rising 4 to 6º C, with a small area of northern Amazonas experiencing an 8º C rise. In the Amazon, the models reveal not only warming but delays in the rainy season's arrival. The region would become 5% to 15% drier at best and 15% to 20% drier under the worst-case scenario. This could affect water flow, not only in the Amazon River but in all of the other rivers in the region; the risk of forest fires would also increase.

Brazil's Pantanal wetlands are also highly vulnerable to climate change. The Pantanal, larger than England and 10 times the size of Florida's Everglades, is the world's largest freshwater wetland, and has extraordinary wildlife, ranging from jaguars to giant otters that mingle in water holes packed with nine-foot caimans. Conservation International says that 63% of the Pantanal's forest in elevated regions and 17% in lowland regions have already been destroyed as a result of cattle grazing and deforestation.

Using a federal law dating back to 1965, ranchers are allowed to clear up to 80% of the forest on their property. Parks and protected areas make up only a small fraction of the Pantanal, for example, and the rest is largely unprotected. The Environment Ministry put in place last year its tropical-forest protection program that includes measures for more rigorous control in the 36 most deforested municipalities and restrictions on credit for ranches and companies that have records of agricultural and environmental irregularities.

But, even with these added restrictions, there is still concern that the "dynamics of deforestation" has changed in the Amazon, moving from clearing large tracts of land to deforestation of smaller areas, which will require a very different strategy to fight it. An additional concern is that, last year, the INPE (Instituto Nacional de Pesquisas Espaciais or the National Institute of Space Research) found a 66% increase in the area of "degraded" land in the Amazon, areas that had suffered loss of vegetation. There were 24,932 square km under that description, compared to 14,915 in 2007.

There has also been significant degradation of the landlocked river delta on the Upper Paraguay River, which straddles Brazil's borders with Bolivia and Paraguay. Erosion, a result of deforestation, has created large sandbanks on tributaries to the Paraguay River, such as the Taquari and Rio Negro, making them partially un-navigable.

Photo by Ion David; travessia.tur.br/eng

Other threatened ecosystems are Brazil's coral reefs, the only reefs on the South American coast; and with a 1.7º C increase of global temperature, up to 45% of Brazil's Cerrado (central savannas) could become extinct by 2050 (IPPC 2007 Report).

Droughts

The majority of the Northeast region is dry and has been for thousands of years. The severe drought that struck the region in the fall of 2005 was the worst dry spell in the country in over a century, causing rivers to shrink to record lows, water shortages, and devastating forest fires. It is considered the largest and most populated, semi-arid region in the world. The Northeast region covers essentially 858,000 square kilometers, 18% of the land area of Brazil, and has 20.5 million people, which is almost 30% of Brazil's population. The most recent UN Intergovernmental Panel on Climate Change ("IPCC") assessment singled out the Northeast region as particularly susceptible to further major droughts if global warming continues.

Agriculture

Drought and steadily rising temperatures also threaten agriculture, a major sector of the Brazilian economy. One of the country's principal crops, soy beans, is particularly sensitive to extreme heat and dry weather. Rising global temperatures could cut into annual soybean harvests by up to 60%. Other crops expected to suffer from a hotter climate include coffee and corn, with none of Brazil's crops expected to benefit from global warming.

Floods

Brazil may also face more severe floods, such as those experienced by the country in 2004. Rising sea levels could make coastal areas such as commercial and tourism hub Macae more prone to flooding.

Brazil's Climate-Change and Water-Infrastructure Policies

The following are Brazil's sustainable climate-change management plans and policies:

- The government's current position is that it does not expect to take direct action to reduce GHG emissions until 2050 and argues that the developed world should shoulder the majority of the necessary actions as well as financial burdens to implement GHS emission-reduction strategies. (This hard-line approach is starting to soften given the range of weather disasters that they have experienced over the last number of years.);
    - To support this view of "softening," in March 2009, the government received $1.3 billion from the World Bank, one of the first of its kind, to provide funding for its sustainable environmental policy and economic growth actions, from Amazon sustainable development to climate change as well as water infrastructure.
- Ratification of the Kyoto Protocol on August 23, 2002;
- 101 CDM (Clean Development Mechanism) UNFCC (United Nations Framework Convention on Climate Change) projects in registration;
- Various incentives programs to promote natural gas importation, to develop and use efficient car engines, and to support the use of biofuels;
- Encouraging the increased use of renewable sources for Brazil's electric supply;
- Brazil's national climate plan includes four-year goals:

- At the end of 2009, targeting a 40% reduction in deforestation from the average of 1996 to 2005, which was 19,533 square km of forest lost in the Amazon;
- After 2009, the goal set at 30% less deforestation in each four-year period with respect to the previous period, or 70% reduction by 2020;
- Elimination of net loss of forest coverage by 2015 through reforestation and establishment of forest plantations;
- Reforestation from 5 – 11 hectares, doubling the current rate of reforestation, including in indigenous areas;
- Planting of more trees at a faster rate than those being chopped down until at least 2015;
- Development of funds and other resources to adapt to and fight desertification, most particularly in Northeastern Brazil;
- Establishment of the Amazon Fund to fight deforestation, supported by 1 billion Euros from Norway and Germany and £100 million from the UK.
- Increasing concentrations of ethanol in the fuel mix for cars by 11% per year;
- Increase in co-generation from 0.5% to 10% of total electric generation;
- Increase in hydroelectric energy generation to reduce dependence on fossil fuels;

- Local Plans include the following:
  - The state of Sao Paulo produces 60% of the country's biofuels and has launched large-scale reforestation projects;
  - The Northwestern state of Amazonas announced in June 2007 a climate-change policy aimed at public education to protect the region's forests and to promote sustainable energy production and consumption;

- First developed 10 years ago, Brazil has implemented a national water-resource-management plan that now includes seven federal basins and 140 state-level basins. Actions taken to date include:

    - Participative water-usage system adopted along the Verde Grande River, which runs through the states of Minas Gerais and Bahia;

    - Adoption of the use of cisterns in the Northeast for the stage of rainwater captured from the roofs of houses;

    - Development of national water-management plan to more evenly distribute water across Brazil. Even though Brazil has the largest volume of fresh water in the world, 70% is located in the Amazon where only 7% of the population lives, while the Northeast has 30% of the population but only 3% of the water;

- Announced in early September 2009, fourteen major Brazilian organizations representing agribusiness, planted forests and bio-energy sectors created the *Brazilian Climate Alliance*, with the goal of contributing solid proposals for the negotiations related to the United Nations Framework Convention on Climate Change, which is to take place in Copenhagen, Denmark in December 2009. The group has already proposed a set of recommendations to the national government grouped into two categories: those regarding international procedures that should be defined by the negotiations under the Climate Convention and those for action items specifically for Brazil.

Chapados Veadeiros, Brazil. Photo by Ion David; travessia.tur.br/eng

Brazil's Tourism Sector

WTTC's 2009 Travel and Tourism Impact report on Brazil provides certain key data points for 2009:

- 6.2% of GDP (approximately US$ 82.8 billion);
- 5.9% of employment (5.6 million jobs);
- -0.4% T&T GDP growth; and
- 6.0% of exports.

Out of 181 countries, its T&T industry is ranked #13 in absolute size but #141 in relative size (that is, in terms of its contribution to the national economy) and #91 in terms of growth rate forecasts. Out of 19 countries in Latin America, it is ranked #1 in absolute terms, #13 in relative terms and #7 in terms of projected growth rates.

Picinguaba; Photo courtesy CiAEco; ciaecoturismo.com.br

Brazil is ranked #45 (out of 133 countries) in WEF's 2009 Travel and Tourism Competitiveness Index. Its best grades were in the areas of safety and security; ground transport infrastructure; air transport infrastructure; and ICT infrastructure.

Euromonitor International, however, states that, despite registering positive growth in nearly every category in 2007, it believes that the Brazilian T&T industry is far from contributing to economic growth in a manner of which it is capable. Research conducted by the Economic Institute of Unicamp, a renowned university in Brazil, in 2007 demonstrated that this low contribution is the

result of “little professionalism and the fact that travel and tourism is often considered a ludicrous activity instead of a major source of jobs, business opportunities, new investment capital and personal income.”

We concur with the assessment that, given Brazil’s tremendous natural, cultural, environmental and other advantages, its inability to date to develop fully a vibrant, rapidly growing T&T industry stands out amongst many of its developing-country peers as well as its Latin American neighbors. We observed in a recent review of the 194 adventure-travel companies rated by National Geographic Adventure magazine in 2009, that itineraries to Brazil were under-represented when compared to those to Peru and Chile, for example (see Xola Blog, “2009 Trends in Adventure Offerings” at www.xolaconsulting.com/blog).

Photo by Ion David; travessia.tur.br/eng

Brazil is starting to turn the situation around, however. In September 2008, the Brazilian Tourism Board (Embratur) launched a worldwide marketing campaign, Brazil Sensational!, which was to run internationally through June 2009. The campaign was designed to show potential travelers how to “live Brazil” through various experiences and sensations. The print, TV, online and out-of-home components to the campaign, totaling millions of dollars in a global media spend, were to highlight contrasting experiences throughout Brazil and were to feature historical and modern attractions, adventure, food, culture, beach and the Amazon forest. In its initial phase, the campaign launched in specific countries in North and South America and Europe, including

Argentina, Chile, Peru, the United States, Canada, Germany, Spain, France, Holland, England, Italy and Portugal. Together, these countries were responsible for 70% of the foreign visitors to Brazil in 2007.

In the adventure travel sector, Embratur continues to invest in projects to develop and promote adventure tourism. The various agencies will spend perhaps $6 million on adventure tourism development projects implemented through ABETA, the Brazilian adventure travel association, including an extensive safety management program, Aventura Segura.

Ziplining with Travessia. Photo by Ion David; travessia.tur.br/eng

Profile of the Inbound Traveler to Brazil

The Americas dominate inbound tourist traffic (57.1% of 2008 total), followed by Europe at 35.9%. While the numbers of tourists remain low, the Middle East is the fastest growing source region by far, growing 42.9% between 2006 and 2007 and 91.0% on an average annually between 2003 and 2007. (Detailed inbound numbers from the Middle East for 2008 are not yet available.) Inbound tourists spent more money per arriving tourist in 2008 than in 2007, increasing from $985 to $1,146.

The two top source countries are Argentina (20.2% of total in 2008, up from 18.3% in 2007) and the United States (12.4% of total in 2008, down from 13.9% in 2007). The next nine countries, which are all European and South American, account for between 3.6% and 5.3% each of the total as follows: South America (Chile 4.8%; Paraguay 4.3%; and Uruguay 4.0%) and Europe (Italy 5.3%; Germany 5.0%; Portugal 4.4%; France 4.3%; Spain 4.0%; and the UK 3.6%.. Inbound tourists were relatively flat from Paraguay, down slightly from Uruguay and down by almost 8% from Chile. There were other South American countries that contributed increased levels of tourist inflows: Bolivia, up 35.6% to over 84,000; Colombia up 111.3% to 96.8 thousand;

and Venezuela, up 36.1% to 62,622. Agentina also continued to expand by 10.4% between 2007 and 2008.

Except for the UK which was up slightly in inbound tourists between 2007 and 2008, all of the above-listed European contributors to arrivals were down, between -1.35% from Germany to as high as -20.6% from Italy.

While the numbers of tourists are still low, there are some emerging, growing source countries as diverse as Austria, Ireland, Australia, and New Zealand, to Ecuador, Bolivia, China and Japan.

For Brazil it seems the key to unlocking its tourism potential will be to leverage the strong base to expand existing markets as well as to attract tourists from new markets that are traveling at increased rates. We will see from following sections that people from all of the BRICMs are becoming avid tourists around the world, so attracting this new generation of tourist will be important over the next five to ten years as the centers of tourism source countries begin to shift.

Profile of the Brazilian Traveler

In a European Travel Commission ("ETC") July 2009 report on Brazil, it stated that it views Brazil as a "high-risk (outbound) travel market," susceptible to boom-bust cycles. It went through a "bust" in 1999-2002, followed by a rapid recovery in 2003-2005 and then by more moderate growth in 2006-2008 supported by growing prosperity and favorable exchange rates. (Outbound travel was constrained somewhat by a shortage of international flight capacity between 2006 and 2008 after the collapse of Varig, Brazil's national carrier.)

While outbound tourism growth grew by only 2.3% between 2007 and 2008, tourist travel expenditures in other countries grew by a whooping 33.5%! This translates into an increase in travel expenditures per departing tourist from $1,702 in 2007 to $2,221 in 2008. It would appear that the Brazilians who travel also like to spend their money.

ETC points out that the Brazilian outbound travel market is dwarfed by the domestic market: Embratur estimated that, in 2007, Brazilians made 5.1 million outbound trips compared to 63.1 million domestic trips. The Brazilian government started in 2007 Programs Viaja Mais Melhor Idade (Travel Program Best Age) to promote domestic travel amongst active Brazilian seniors. The program offers retired people and travelers over 60 a 50% discount at 1,000 hotels in Brazil during the low season. In the first year, the program has resulted in more than 9 million seniors traveling domestically a year. The government is hoping that, through this program, it can

increase that number through attracting foreign seniors looking for warm places such as Salvador, Fortaleza and Maceló.

In the first two months of 2009, it was reported that Brazil's tourism sector's revenue grew by 20%, boosted primarily by domestic travelers. Hotel occupancy increased 23% nationwide compared to the same period last year. 85% of revenues in the first two months were generated from Brazilians traveling in the country, with international visitors accounting for the remaining 15%.

ETC states that the exceptional spending levels of Brazilians in recent years (alluded to above) are partly a result of the weakness of the U.S. dollar and the strengthening of the real. The average length of trips to Europe from Brazil is 15 days, though trips often involve multiple destinations, with the time spent per country as low as 3 nights. Brazilians tend to take extended holidays within Brazil between December and February during its summer, and those rich enough to do long-haul trips, in the middle of the year.

In terms of the profile of Brazilian travelers, ETC states that they tend to come from higher social classes, to be relatively affluent and well educated, multilingual and most commonly in their 30s and 40s. The Brazilian affluent class is growing rapidly, with the highest-earning 10% of households having an average disposable income of USD$72,932 in 2007, an increase of 124% from 2002. There are approximately 20 million people today who are in the affluent category.

Middle-class Brazilians of more modest means focus their holiday aspirations on travel within Brazil or to neighboring destinations within Latin America. Male travelers outnumber female long-haul travelers by 60 to 40. Brazilians like to think of themselves as tolerant, friendly and fun-loving and are strongly attracted to urban destinations for shopping and entertainment. However, there appears to be a great variety of interest, including in]adventure travel, sports, arts, culture and heritage, nature and travel for the sake of exploration. There also is expressed a strong interest in "folklore" (that is, music, dance and artifacts). The report states that few in Brazil travel abroad for "sun and beach" vacations since they consider that they have plenty of that at home.

The top 10 destinations for Brazilians in 2008 are as follows, in descending order of importance: The United States (769,232); Argentina (871,147); Chile (261,080); Italy (252,193); Spain (226,076); United Kingdom (178,734); Germany (160,284); Paraguay (134,985); and Canada (71,619). While certainly not an exact match, it does appear that there is some correlation between countries that like to visit Brazil and Brazilians who like to visit those countries. Four countries which have been top source countries for Brazil but are not top destinations for

Brazilians are Portugal, France, the Netherlands, and Japan. Rapidly growing, emerging destination countries include China, Turkey, Australia, Belgium, Japan and Israel, stand out for their high growth rates, albeit from relatively small bases.

Profile of the Brazilian Adventure Traveler

In 2009 ABETA conducted primary research commissioned to better understand Brazil's domestic adventure market specifically. Researchers surveyed 904 people within the following parameters:

- Between 18 and 59 years old;
- Who traveled inside Brazil over the last 12 months;
- Decision-makers or active participants in the travelling choice;
- with several motivations;
- Who paid or would pay for some activity/interaction with the nature (Adventure Tourism or Ecotourism);
- Residents in the capital cities of the largest tourism percentages in Brazil: São Paulo, Minas Gerais, Rio de Janeiro and Rio Grande do Sul.

Similar to what we have seen in surveys of North American adventure travelers, Brazil adventure travelers are highly educated, with 27% completing college and 13% with post-graduate study. 42% are married or in a "stable union," and 13% have small children living at home.

Photo courtesy CiAEco; ciaecoturismo.com.br

29% of the sample participated in an adventure trip in the last 12 months inside Brazil, for the main purpose of "being in contact with nature, observing it or practicing activities in it."

A key aspect of “adventure” Brazilians is the element of play; marketing that emphasizes adrenaline was shown to scare prospective travelers from trying new activities. Given the importance of traveling with family, adventure operators seeking to attract Brazilian travelers should emphasize play, heterogenous family groups and mixed itineraries.

Perhaps most interesting and relevant to our discussion of climate change and resource management is the strong connection Brazilians feel between travel, being with family, and returning to the spirit and feeling of childhood**.** Many of the interviewees in the study described childhood scenes of travel in the outdoors with emotion. Brazilian adults who care about the environment associate it with happy times in their childhood, with escape, freedom and joy. Encouraging adventure and nature tourism in Brazil is another way to bolster environmental consciousness and build support for sustainable environmental policies.

Climate Change, Water Resources and Sustainable Tourism and Adventure Travel in Brazil

Ubatuba - Morro do Corcovado; Photo courtesy CiAEco; ciaecoturismo.com.br

Brazil is a large country with immense natural and cultural resources. It has a wide array of tourism activities and types of vacations, from adventure tours to beach holidays. However, although there are currently more than 100 nature-based destinations in Brazil, there is, in practice, low levels of adventure travel and ecotourism that is actually practiced in the country

(The Centre for Research on Multinational Corporations or “Somo”). Results from Somo research show that ecotourism in Brazil, as currently practiced, is a collection of varying activities ranging from a walk in the woods to a stay at an eco-resort. Eleven states in Central Brazil currently comprise the “eco-tourism” corridor, in which can be found a wide arrange of ecological attractions provided by local as well as international tour operators. However, the study concluded that initial, unrealistically high expectations of the size and profitability of the marketplace, as well as of the timing of investment returns, have lead to failure of many investments over the last five years.

Brazil currently has 298 nature reserves, 62 national parks and seven biosphere reserves. It has 10 cultural and 7 natural World Heritage sites, and has applications in on 17 other cultural and natural sites. As of 2004, Brazil had 1,197 protected areas in the country, covering 18% of its total land area (World Resources Institute). More land has been protected since that time. Earlier this year, Brazil, along with Nepal, were awarded National Geographic Adventure Magazine’s Destinations, Equipment and People That Will Inspire Adventure Travel for 2009. Only these two destinations were rewarded with the designation Best of Adventure, with Brazil making its second appearance in this category within three years. Brazil was selected because of its improved infrastructure, better access to the Amazon, the countless natural sites and pristine beaches.

Embratur estimates that the adventure tourism industry in Brazil attracts 3 million visitors a year (out of a total of 5 million), involving approximately 2,000 countries, and with an average turnover of more than 112 million Euros. Some of Brazil’s adventure travel hot spots include: Foz do Iguaçu (Iguaçu Falls) in the state of Paraná (activities include wild water rafting, abseiling, tree-top walking, trekking, mountain biking and rock scaling); Florianólis, capital of the State of Santa Catarina located in southern Brazil (with 50% of its land area protected as natural reserves, including 42 beaches and two lakes); the Pantanal located in the State of Mato Grosso do Sul (the world’s largest wetlands); Fernando de Noronha, an archipelago consisting of 21 volcanic islands with crystal-clear waters and excellent diving); Lençóis Maranhenses, a national park with a unique ecosystem consisting of a vast range of sand dunes, impressive landscapes and warm-water lagoons.

Ubatuba CouvesPasseio; Photo courtesy CiAEco; ciaecoturismo.com.br

There are many other emerging adventure-travel destinations. The country's Atlantic Rainforest (Mata Atlántica) contains the world's second largest biosphere reserve, 4 out of 7 of Brazil's world heritage natural sites, and approximately 600 of the 900 conservation units in the country. (For an interesting itinerary in this region, visit CiAEco, a Brazilian adventure travel company working with local operators to provide guided kayaking and hiking trips in this region.) The flora and fauna are considered unique, distributed over 7 ecosystems with up to 5 different altitudinal zones.

Somo has recently undertaken some tourism research, using Porto de Galinhas, a small village in northeastern Brazil, as a case study. Its goal was to analyze sustainability issues in the tourism industry and to map Brazil's tourism value chain. Porto de Galinhas has experienced a tourism boom over the past five years, with many local residents and entrepreneurs feeling that tourism is the key to the region's economic development.

However, the community is struggling to ensure the sustainability of the industry, both in terms of retaining as much value as possible within the region and doing so without compromising the local environment, ecosystem and culture. Without going into detail here, the study confirms that

responsible, context-conscious, and locally-oriented tourism contributes more in the way of economic development while supporting social, environmental and cultural sustainability. One of the key actions that reduce leakages include encouraging tour operators to offer packages that include small-scale, locally-owned accommodations and services rather than large, multinational chains.

Brazil's national government could do more to strengthen the connection between its policies and economic-development plans, particularly those related to climate change, water scarcity and specific sectors of the economy, for instance, tourism. Although discussions surrounding the issues are beginning to happen, the international debate and various national agendas are taking center stage at this point, and Brazil, as well as other of the BRICMs as we will discuss in following sections, have not yet focused on mitigation and adaptation plans for specific sectors of the economy, including tourism. Given the vast array of natural resources that will need to be protected, Brazil will need to move toward a more sustainable tourism policy, one in which the adventure tourism segment will play a key part.

The Russian Federation

Overview

Russia is the largest country in the world, covering more than one eighth of the earth's land mass, crossing 11 time zones and home to 160 different nationalities, straddling European and Asiatic cultures. Interestingly, forest resources in Europe are expected to expand in view of declining land dependence, increasing incomes, concern for protection of the environment and well-developed policy and institutional frameworks to support the expansion. Europe accounts for about 17% of global land area but has approximately 25% of the world's forest resources, approximately 1 billion hectares, of which 81% is found in Russia, a precious resource as a carbon-absorption mechanism. Since the end of the former Soviet Union, foreign direct investment in Russia has accelerated rapidly, rising to $USD 8 billion by 2003 and then surging to an estimated US $55 billion in 2007 as overseas companies began to identify a wide range of opportunities in the region, including tourism.

Russia is blessed with an abundance of natural resources. It holds major reserves of oil, gas, coal and minerals. Its vast forests, 22% of the earth's land area and 47.9% of its territory, absorb carbon dioxide from the atmosphere, serving as a carbon sink, much as the Amazon tropical forests do, that is vital to global environmental balance. They are also the habitat for rare and important biodiversity.

Only 7.6% of the country's total land area is protected. "Russia's natural resources are a key to much needed economic growth, but exploitation and poorly planned economic development have caused environmental problems at exorbitant costs." (USAID, Russia and Global Climate Change, May 2008)

Photo by Olga Geister

Russia has 1,067 major cities, 13 of which have a population of 1 million or more. The largest cities are Moscow, St. Petersburg, Novosibirsk, Nizhny Novgorod, and Yekaterinburg. Vladivostok and Khabarovsk, the two main cities of Russia's Far East, have fewer than 600,000 inhabitants each.

Russia's energy industry has complex inter-relationships with global markets, most particularly neighboring Europe, and policies are being adopted that will have implications for the level of GHG emissions both in Russia and throughout Europe. In Europe's rush to reduce its reliance on coal-fired power generation from domestic sources, it is increasing its export dependence on Russian natural-gas supplies. In Russia, the country has adopted a strategy of using its huge natural-gas reserves to produce substantial levels of revenues and foreign currency for the national government and at the same time moving its own domestic power production towards coal-fired and nuclear-power generation. The large concern is that, by making these policy changes, Europeans are inadvertently setting up a situation for increased GHG emissions from future Russian coal-fired power generation.

The healing waters of the River Arshan in Siberia.
Photo by Olga Geister

This is obviously a complex situation, which is even more complex when Russia's coal industry is examined separately. Russia is second only to the United States in proven world coal reserves (though its gas reserves are even larger). Russia is currently the fifth largest producer and the third largest exporter of coal, 50% of which is already consumed in European markets. This is not surprising since coal has been the fastest growing fuel source in the world over the last six years, driven in large part by China's expanding domestic demand for coal-fired power generation and the pressing need in India to meet the projected economic and energy challenges of becoming the world's most populous nation within the next decade.

In Russia, the growth rate of coal production output has exceeded growth rates over the last several years for both oil and gas. There is no question that the complexity of the situation, and the inter-relationships between Russia and world markets for its coal, gas and oil energy resources, will have major effects on climate change over the coming years. The issues surrounding the tradeoffs between energy security, relative environmental impacts, and global climate change will need to be addressed by major global players cooperating to find solutions to the delicate balancing act of these competing demands.

According to the 2009 G8 Climate Scorecard (WWF/Allianz), Russia emitted 2,268 million tons of carbon dioxide equivalent (Mt CO2e) in 2007. The sources of Russia's GHG emissions are electricity and heating (59%), industry (15%), transport (9%), households and services (8%), agriculture (6%), and waste (3%). The energy sources of emissions are gas (54%), oil (21%), coal (16%), nuclear (6%), hydro (2%), geothermal (0.06%), and solar/wind/other renewable (0.0%).

Wilderness of Buryatia Republic, south central Siberia.
Photo by Olga Geister.

Russia's emissions rates are average for industrialized countries, with high use of natural gas but low efficiency. Emissions are well below its Kyoto targets because of the economic downturn but are still steadily increasing. In fact, in the WWF/Allianz 2009 Climate Scorecard, both Canada (#8) and Russia (#7) came in at the bottom of the scorecard, with the United States moving up two places to #6 from 2008. Russia is considered to have a mediocre climate position and no climate policies to speak of, with high emissions, problems with Soviet-era management approaches, and lax pollution laws. In fact, Russia's "climate plan" allows for GHG emission increases of 30% on the grounds that much of the Soviet heavy industry has disappeared, which amounts to 10-15% reductions on the 1990 baseline established by the Kyoto protocol for Russia.

(It should be noted that, while Russia is amongst the world's five largest GHG emitters, with the ratification of the Kyoto Protocol, Russia formally took a step towards leading its economy on the path toward sustainable development. It will be equipped with a large surplus of emission tax credits that can be sold to those European and other international buyers who need such credits to comply with their own reduction targets.)

Russia's Vulnerability to Climate Change

Because of its vast territory and wide variety of geographical conditions, there are considerable differences, both spatially and seasonally, in terms of the impacts of climate change. There is no question that Russia is experiencing the effects of climate change, in some places quite dramatically. Average temperatures have increased by 1ºC between 1900 and 2004 in comparison to global increases of 0.74 ºC during that same time period. As a result, it is already experiencing the impacts of climate change in the form of milder winters, melting permafrost and ice caps, changing precipitation patterns, the spread of disease, and increased incidence of drought, flooding, and other extreme weather events (for example, from an average annual number of 150-200 in the early 1990s to 250-300 from 2001 to 2004 to a record figure of 445 registered in 2007).

It is predicted that, by 2030, Russia will start to feel the impacts of climate change in relation to both its water and food supply. While Russia has a number of attributes that provide it with greater capacity for resilience than some other industrializing countries, it is also felt by various climate-change experts that Russia's adaptive capacity will be severely tested (National Intelligence Council report: Russia and Climate Change, April 2009).

Expected climate changes may have both negative and positive impacts on Russia. The following summarizes both the positive and negative effects by type of climate-change problem. (The following summary is derived from a number of data sources including the National Intelligence Council report on Russia; WWF/Oxfam report, Russia and Adjacent Countries: Ecological, Economic and Social Consequences of Climate Change, the Russian Weather Bureau, the Russian Academy of Sciences):

Energy

A positive effect of climate change for Russia is that a warming climate could bring about milder and shorter heating seasons in certain areas of the country, which in turn may lead to reduced energy demand. Some have stated that the shortened seasons for Russia's "notoriously inefficient municipal heating systems" will reduce energy usage and save money. Increased water availability, particularly along various Siberian rivers that are used for hydroelectric power, could

result in increased renewable power generation in certain parts of the country. In addition, another positive of higher temperatures is that, as the permafrost melts, forests migrate northward and more land becomes arable.

However, existing and future energy infrastructure for the petroleum industry in particular is highly likely to experience many challenges – structural problems, risks associated with river crossings and construction difficulties because of permafrost thaws occurring earlier and deeper than in the past. This could have material negative effects on an industry that is the largest source of revenue to the national government.

In Karelia, near the border with Finland. Photo by Olga Geister.

Water

One of the fundamental issues in Russia is the unequal distribution of its water resources. Russia has plenty of renewable water resources sufficient to provide for its own population many times over. Approximately 80% of the country's population lives in the European part of the country which has only about 8% of the water resources. The rest is found in the scarcely populated regions east of the Ural Mountains. This is of obvious concern to the national government since household water consumption is increasing in urbanized and urbanizing areas in the western part

of Russia, putting increased pressures on the quality of groundwater sources, which have been compromised over time by heavy pollution from its aging industrial sector.

Many parts of Russia will actually experience increases in the availability of water, including much of Siberia, the Far North, and northwestern Russia. This will bring about increases in hydroelectric power as discussed above. However, managing increased water flows is not without its downsides, especially when increased flows are coupled with extreme weather events such as downpours or springtime, ice-clogged floods.

On the flip side of the coin, increasing water shortages are predicted for southern parts of European Russia, where there are already significant political and socioeconomic stresses. Moreover, a number of Russia's densely populated regions are already subject to shortages, which are expected to become more pronounced in the future.

One of the first instances of "water poverty" occurred in Central Asia with the drying-up of the Aral Sea, at one time the fourth largest, land-based water source in the world. Experts say that this is at least in part a result of climate change, though approximately 80% of it was a result of the over-taxing of its resources for farm irrigation. The death of the lake has led to mass population migrations and extreme poverty for those remaining.

Increased temperatures in the southern and western regions of Central Asia, where the bulk of agriculture and Russia's population are concentrated, will likely cause a 20% river-outflow reduction because of dwindling ice packs that feed the riverheads. The WWF/Oxfam report forecasts that there will also be more flash floods and a harsh water deficit during the summer months. The report also forecasts that, by 2050, thousands of small glaciers will have disappeared, iced areas will reduce by 20%, and the volume of ice overall will be reduced by 24%.

Russia's melting permafrost and earlier thaws could cause large-scale problems with infrastructure in the country's northern regions, such as over-saturated building and other technical-structure foundations; its oil and gas complexes and pipelines; its power stations and electrical infrastructure surrounding them; and its radioactive storage facilities and dump-sites. A number of experts observe that the Nordic countries are particularly vulnerable to the huge amounts of radioactive waste which have not yet been securely safeguarded in the northwestern regions of Russia. The specific Russian areas considered most at risk are: Chukotka in northeastern Siberia, the upper basins of the Indigirka and Kolma Rivers, the southeastern portion of the Yakutsk region, the Western Siberian plains, the shores of the Kara Sea, the Arctic

Island of Navaya Zemlya, as well as other island frost north of Russia's European territory (WWF/Oxfam report).

One side effect of ice-pack and permafrost thawing is the potential release of the vast stores of methane, a highly potent greenhouse gas, from frozen deposits both on land as well as under the ocean. If this methane is tapped for use as an alternative fuel (deposits rival fossil fuels in terms of their size), it also could have tremendous destructive power on the global environment, whose effects are little understood at this point in time. Another study released in February 2009 by the Federal Service for Hydrometeorology and Environmental Monitoring suggested that, frozen soil or permafrost is responsible for holding around a trillion tons of carbon that would be released if it melts.

Another effect might prove to be a double-edged sword: the melting ice will make the northern regions of Russia, both on-land and on the ocean, more navigable and accessible. This may also bring increased competition for the region's vast resources of oil, gas, and minerals from countries such as Canada, the United States, Norway and Denmark.

Finally, Lake Baikal, the world's largest and deepest lake, was expected to be among those most resistant to climate change because of its huge volume and unique water circulation system. In 1996, it was also declared a World Heritage Site because of its biological diversity. At least 2,500

plant and animal species inhabit the lake, including the freshwater seal, most of which are not found anywhere else on earth.

However, long-term data collection, drawing on 60 years of research, reveals that lake warming is in fact taking place. The data reveal "significant warming of surface waters and long-term changes in the food web of the world's largest, most ancient lake (at 25 million years old)." This is a clear indication to research scientists involved in the project that climate change has affected even the most remote corners of the planet.

Agriculture

As growing seasons become longer and precipitation patterns change, using lands that previously would have been too far north now become usable for agricultural purposes. Raising new crops and new varieties of crops currently not grown in Russia will become possible. The largest open question is whether these improved growing conditions will actually result in increased yields. Climate-change scientists believe that agriculture will become more reliant on

irrigation (especially in the southern parts of European Russia) and more vulnerable to droughts and extreme weather conditions.

Migration

Russia, which is already the number two destination for immigrants after the United States, is likely to experience greater migration pressure because of climate-change problems from Central Asia, the Caucasus countries, Mongolia and northeastern China. These land areas are expected to experience increased water shortages and resulting economic stress. In addition, internal migration pressures may occur as residents in Russia's many northern cities face increasing economic and climate-related challenges. The WWF/Oxfam report believes that Russia likely faces "mass migrations of populations within Russia as well as from its neighboring countries as people search for water resources." Some experts are now calling these individuals "climate-refugees."

An interesting aspect of this migration pressure is that it may have its positive side effects if it can be managed properly and if these diverse populations can be integrated effectively into the economic growth of the nation. Russia's population is aging rapidly, and life expectancy low compared to many other countries. This inflow of migrants could help Russia to continue a growth path by providing a new workforce for its many industries facing declining numbers of employees of workforce age.

Accentuation of Existing Socioeconomic and Sociopolitical Stresses

Some of the most affected regions in Russia are ones where socioeconomic and political relations are already unsettled. Most of the impacts of climate change will manifest themselves in smaller cities and in the Russian countryside. The National Intelligence Council states that the long-turbulent North Caucasus region will be drier, hotter, and less prosperous than it

Picking nets in Siberia; Photo by Olga Geister.

is today. The Primorskiy Kray and the Russian Far East, which have long struggled to develop peacefully next to China, appear likely to experience even greater migration pressures, which could exacerbate long-standing cross-border tensions.

Russia's Climate-Change and Water-Infrastructure Policies

In October 2004, the Russian Parliament signed the Kyoto Protocol, which set limits to Russia's GHG emissions by the end of the Protocol's first commitment period (2008-2012) at the level of the country's emissions in 1990. Between that year and 2002, Russia's GHG emissions fell dramatically because of the significant economic contraction and dislocation associated with the ending of the former Soviet Union and its replacement with the Commonwealth of Independent States. As a result, Russia has no difficulty in meeting its formal commitments under the Protocol and actually has a surplus of transferable emissions' credits under the Protocol. Thus, Russia may choose to use these surplus credits against future emissions reduction obligations without needing to actually reduce its overall level of GUG emissions even though it is the third largest GHG emitter in the world after China and the United States. Most industry observers believe that, after 2012, any agreements will be driven more by Russia's national economic interests than by a desire to make a meaningful contribution to the reduction of GHG emissions;

In May 2007, the Russian government approved the National rules and regulations for Joint Implementation ("JI") Scheme of the Kyoto Protocol, including an act that sets up a legal base for signing and implementing JI projects to reduce GHG emissions. Currently, there are 54 such projects ready for implementation that would result in GHG emission cuts amounting to 79.2 million tons in such sectors as natural gas, electrical energy, coal, chemical, and forest and wood industries;

There was a Presidential decree in June 2008 stipulating a 40% increase in energy efficiency of the national economy by 2020. The following regulatory acts are to be adopted in 2009 – 2010: introduction of efficiency standards in energy-intensive sectors; strict restriction on further use of obsolete technologies; promotion of public sector's leading role; labeling of power-intensive goods; creation of incentives for businesses for efficiency improvements; and public support for R&D in the area of energy-saving technologies.

It has very few climate-related policies. WWF/Allianz 2009 Climate Scorecard states that Russia has "few policies in place" to curb emissions and has no "comprehensive" national plan for combating climate change; it gets less than 1% of its energy from renewable sources.

The Russian Regional Environmental Centre in December 2008 stated, however, that there are barriers for further development of climate-change and sustainable energy policies in Russia:

- Climate change is not yet among the top priorities of Russian policy makers;
- Climate change and sustainable-energy issues are split up between 9 ministries and agencies that have low levels of cooperation between them;
- Weak signals from federal, regional and local authorities;
- Enormous oil and gas resources slowing down the transfer to low-carbon and renewable sources of energy;
- Low social and environmental responsibility of business;
- Low level of awareness of regional policy makers, business and the public;
- Low potential for broad promotion of renewable energy;
- Bureaucratic barriers for active involvement of Russian business in emissions trading; and
- Poor cooperation between all stakeholders (e.g., national government, international organizations, regional and local governments, business, NGOs, science community, mass media, and general public).

Russia on the national level has a long way to go before it will be able to implement a comprehensive, detailed, climate change adaptation and mitigation strategy, including realistic plans for its managing its water resources.

Russia's Tourism Sector

WTTC's 2009 Travel and Tourism Impact report on Russia provides certain key data points for 2009:

- 6.2% of GDP (approximately US$ 90.3 billion);
- 5.3% of employment (3.8 million jobs);
- -4.1% T&T GDP growth; and
- 8.4% of exports.

Out of 181 countries, its T&T industry is ranked #12 in absolute size but #139 in relative size (that is, in terms of its contribution to the national economy) and #19 in terms of growth rate forecasts. Out of 14 countries in Central and Eastern Europe, it is ranked #1 in absolute terms, #10 in relative terms and #4 in terms of projected growth rates. T&T's contribution to the national economy is very low (about 1% of GDP), and the spatial distribution of tourism in Russia is uneven. For example, while tourism accounts for almost 18% of St. Petersburg's employment, there are few other regions that are dependent on international tourism (though some are dominated by domestic tourism. These are mostly located in the south along the shores of the Black Sea and the northern slopes of the Caucasus Mountains in the areas of Krasnodar Krai and Stavropol Krai).

Russia is ranked # 59 (out of 133 countries) in WEF's 2009 Travel and Tourism Competitiveness Index. Its best score was in the area of ground transport infrastructure, followed by tourism infrastructure, ICT infrastructure and safety and security.

The dramatic changes in Russia during the last decade of the 20th century have caused profound changes in all aspects of Russian life, including tourism. Deloitte Russia, in an executive report in the autumn of 2008 entitled **Solving the Russian Riddle**, observes that, like other Russian industries, tourism has only begun to develop commercially in the past 15 years, though, with 22.9 million visitors in 2008, it ranks as one of the most visited countries globally. However, as seen in the above statistics, while WTTC ranks Russia as #12 globally in absolute terms in the T&T industry, it comes in at only #139 in terms of its contribution to its own national economy. The general consensus is that Russia is a long way from achieving its potential as a tourist destination, most particularly given its size and the diversity of its potential offerings.

In comparison to the other BRICMs, it has the lowest expenditures per arriving tourist, though it had the fastest growth rate of 21.8% between 2007 and 2008. In addition, it received more dollars from arriving tourists than departing Russian tourists spent abroad, which is also the case in India, China and Mexico, which have even higher percentages. It does, however, have more departing tourists as a percentage of its population base than any of the other BRICM countries.

Some of the limiting factors in terms of developing its tourism economy over the near term, most particularly to attract the higher-spending leisure and business traveler from the West as well as to diversify into the fast-growing Asia/Pacific markets to its east, include the following (Deloitte Russia report, Euromonitor International Travel and Tourism in Russia and various newspaper articles):

- Stringent visa requirements, which places it at a disadvantage vis-à-vis some of its Eastern European and Southeast Asian competitors where such restrictions have been abolished;
- Significant bureaucratic restrictions on investing in and developing tourism businesses;
- Punitive and complex tax structure;
- Political environment not conducive to foreign investment in the Russian T&T industry;
- Low availability of high-quality tourism infrastructure, most particularly in the hospitality sector. For example, the supply of hotel rooms in Moscow is already far outstripping demand, making Moscow currently the most expensive city to visit in the world. The scarcity and costs also limit lengths of stay;
- Perceived high costs for relatively poor tourist services;
- Low number of low-cost airlines;
- Concerns about Russia's flight-safety standards;
- A limited ground-transportation infrastructure nationally;
- Strained relations between Russia and many of its key, growth source markets; and
- Lack of an attractive, cohesive and sustainable Russian "travel brand" as a high-quality, welcoming, safe and "must-see" destination.

The main visitor destinations today in Russia are the two Russian capitals, Moscow and St. Petersburg. More than 75% of incoming visitors only visit the two cities (Federal Tourism Agency), with 80% of the leisure tourists visiting St. Petersburg (Federal Tourism Agency). In 2007, Moscow attracted over 4 million overseas visitors, with many arriving as business travelers. On the other hand, St. Petersburg, with its proximity to Europe and a rich cultural heritage, is Russia's biggest leisure tourist asset, with over 4.5 million visitors in 2007, half of whom are from overseas. While these visitor numbers are comparable to other major European tourist magnets, the city has significantly fewer rooms than most major European urban centers (Deloitte Russia report).

It was reported in May 2009 that the number of foreign tourists visiting Moscow had dropped 19% in the first quarter of 2009, compared to the same period last year, after growing from 2 million tourists in 2002 to 4.1 million in 2008. The city of St. Petersburg is expecting a 30% drop in foreign tourists and a 10% to 15% drop in Russian tourists in 2009.

As a result, most hospitality development is focused on the two major cities, with Moscow and St. Petersburg accounting for almost 70% of Russia's current hotel-development pipeline of 10,807 rooms (Deloitte Russia report). IHG's recent announcement of its Holiday Inn project in Moscow will be the group's 16th hotel in the country. Its plans are to have 9 in Moscow, with three under

construction in St. Petersburg, and further hotels in the pipeline for the cities of Samara, Rostov, Chelyabinsk and Novosibirsk.

Hilton has identified Russia as a key new market, with major plans for the future. The opening of the Hilton Moscow in May 2008 marketed its first foray into the country. Over the next ten years, it plans on having more than 70 Hilton Family hotels across key Russian cities and regional centers, working with local developers and hotel owners through a combination of management and franchise agreements.

Accor is another hospitality group actively looking at the Russian market. It stated earlier this year that it plans to have one or two hotels in each city with more than one million inhabitants. It is also looking at niche cities with tourism potential. It already has over 30 contracts signed all over Russia. Many of these hospitality operators say that it is improved accessibility from key feeder markets, such as Western Europe and the United States, combined with increased wealth and mobility of domestic travelers, that has set the stage for the growth in Russia's tourism and hotel industry over the near to intermediate-term.

In terms of air transport, Russia is served by around 70 international airports, with air traffic dominated by the three Moscow hubs, with expansion plans expected to increase their capacity to over 85 million by 2012. Air traffic is dominated by the major scheduled carriers, including the Russian market leader Aeroflot, now part of the Skyteam alliance.

However, Russia has been held back by the lack of alternative air-travel options, such as low-cost carriers ("LLCs"). European players are beginning to offer services to Russia, such as Germanwings and Clickair, but the two European giants, Ryanair and easyjet, do not yet fly into the region. Some of this is related to historical changes in domestic travel. Domestic air travel plummeted from over 130 million passengers at the end of the Soviet era to less than 20 million in 2007, generally prompted by high prices and safety concerns. However, the launch of internal airline Sky Express in January 2007 gave Russia its first ever low-cost carrier. At the end of August 2009, a new low-cost carrier, Avianova, entered the market, with fares starting at eight dollars.

However, a number of industry observers is skeptical of the business model and its workability in today's Russian domestic market, which overall is still low at about 22 to 23 million per year (which is about half the number found in the UK which has less than half of the population). The Deputy Transport Minister recently commented that key factors to ensure success of LLCs in Russia are missing: 1) large-scale passenger flows between many cities; and 2) use of alternative

airports. He pointed out that the only routes with large-scale flows are between Moscow and St. Petersburg and between Moscow and Sochi along the Black Sea in the summer and maybe between Moscow and Ekaterinburg. In terms of secondary airports, he said that Russia simply does not have them. Finally, demand for air travel is down substantially this year, whatever the price. In a country so huge, covering so many time zones, this is clearly a disadvantage for the development of a national tourism sector.

The lack of aviation infrastructure may put the country's rail system back on a level playing field with the airlines. Investments in road and rail infrastructure are increasing, with government plans to build 640,000 km of new road networks linking Russia's major towns and cities. Meanwhile, the Finnish-Russian rail joint venture plans to open a high-speed service in 2010 between Helsinki and St. Petersburg.

It is worth noting that Russia does have an extensive rail system in addition to some of the world's most famous railways, such as the Trans-Siberian. While quite complicated, it is possible to connect from Moscow to almost any point in Eurasia using a combination of trains, buses, and even planes. The key issue is the time it takes to get between places and the kinds of connections that need to be made to meet various timeframes.

Profile of the Inbound Traveler to Russia

Almost 90% of tourists to Russia are from Europe, followed by 6% from Asia/Pacific and 2% from the Americas. European and Asia/Pacific growth rates between 2006 and 2007 were moderate and down by 12.5% from the Americas. While starting from a much smaller base, the major growth market was South Asia. (There are not yet any detailed 2008 UNWTO tourism data for the Russian Federation.) In broad terms, the number of arriving tourists increased by 3.3% between 2007 and 2008 to 23.7 million. Expenditures per arriving tourist decreased from $549 in 2007 to $504 in 2008.

The sheer volume of tourists is dominated by the Commonwealth of Independent States ("CIS") countries (former states of the Soviet Union). Of the top 15 source countries, eight are CIS countries and three are non-CIS countries but former states of the Soviet Union that chose not to join the CIS (Estonia, Latvia and Lithuania). The Ukraine in the #1 position makes up 28% of incoming visitors. The other four non-CIS source countries are Finland at #6 position, Poland #7, China #8, and Germany #11. The two CIS countries missing from the top 15 list are Belarus and Turkestan. Most industry analysts state that a large portion of Russia's visitor numbers is comprised of VFR ("visiting friends and relatives") tourists as well as migrant workers (Deloitte Russia report).

As clearly shown by these statistics, Russia has yet to attract more of the high-spending leisure and business travelers from the West as well as from the Asia/Pacific region. While international tourism receipts have more than doubled since the start of the current decade, they remain relatively low compared to other destinations with comparable visitor volume. For example, Turkey had in 2008 25 million tourists compared to Russia's 22.9 million, but received $22.0 billion in international tourist receipts compared to Russia's $11.9 billion.

Russia does have some interesting emerging sources of tourists, and while the bases are small, the growth rates are substantial. Turkey, the Philippines, India and Brazil are examples of emerging, rapidly growing source markets.

As Deloitte Russia's report states, quoting Winston Churchill: (Russia is) "a riddle, wrapped in a mystery, inside an enigma." It is a vast country with almost unparalleled opportunities to develop a widespread T&T industry covering the wide range of tourism products available. We will review in following sections the kinds of opportunities available in adventure travel, which, while known to a certain extent by knowledgeable adventure travelers already, they are generally viewed as inaccessible, time-consuming because they are hard to get to, and difficult to integrate into long-haul travel plans. We believe that many adventure travelers are eager to explore mysterious, new destinations, which we would count Russia as one, and that the nation needs to counter the negative perceptions travelers have through a concerted new branding effort aimed at generating positive momentum that intensifies the mystery and exoticism that still surrounds Russia.

Profile of the Russian Outbound Traveler

Russians became avid travelers during this decade, with rapid growth experienced from both the affluent as well as Russia's emerging middle class. This emerging traveling class of individuals will also help in the development of the domestic tourism sector, which will in turn promote foreign tourists venturing farther afield into Russia. In 2007, of the top 15 destinations for Russian

tourists, only two were CIS countries, the Ukraine and Kazakhstan. The Ukraine was also the largest contributor to the number of arriving tourists into Russia. There is considerably more diversity in the destinations that Russians choose than in the source countries that choose to visit Russia. The Federal Tourism Agency says that the vast majority of visits to CIS countries are for reasons other than tourism, i.e., business, VFR, emigration and military duty.

There are no detailed outbound data from UNWTO for 2008. However, in broad terms, Russians continued to travel in 2008, with outbound traffic up 6.6% to 36.5 million in 2008. Even more

noteworthy was that Russians continued to spend, increasing the average expenditure per departing tourist from $646 in 2007 to $681 in 2008.

Between 2006 and 2007, Russian travel to Germany was flat, slightly down in Greece, down by 7.2% to the UK and down by 4.4% to Poland. All of the other 11 top-destination countries experienced double-digit growth. Turkey and Egypt are clearly “hot” destinations for Russian travelers, with Thailand and the Czech Republic emerging rapidly amongst the top 15. In terms of emerging destination countries, there is a wide variety of countries represented, but there appears to be a definite trend, both in existing and emerging top destinations, to visit places with sun-and-beach holidays, not unexpected given the climate in much of Russia.

The European Travel Commission’s Market Insights Russia, while published in April 2007, provides some insights into the profile of the Russian traveler.

- Most of the travel growth out of Russia has been for sun-and-beach destinations, notably Turkey and Egypt;

- Destinations where no visas are required are also viewed as attractive options, such as Turkey, Egypt, Dubai, Tunisia and Thailand. Many trips are decided and booked at the last minute so Russian travelers do not like to have to apply for visas ahead of time;

- Russians are passionate travelers, and it is no longer an elite few that travel. Enthusiasm for travel has spread to the fast-emerging middle classes;

- Russians love to shop, reflected in numerous surveys over the last five years. It is the second choice after relaxing on the beach as a leisure activity on vacation;

- Over the last several years, trips made by Russians have become shorter, preferring short breaks of less than a week to trips of two or more weeks. This could be a reflection of the economic climate over the last two years;

- IPK International’s Russia Travel Monitor suggests that holidays account for 56% of total outbound trips, other leisure (including VFR) 19% and business 25%.

- While sun-and-beach holidays predominate, Russians appear to be increasingly willing to try new, often exotic, destinations. Long-haul travel is gaining market share;

- Although market growth is coming in large part from the emerging middle classes who are "new" travelers, Russians who have already traveled several times abroad are becoming more sophisticated and looking for a wider set of travel experiences. These, generally more affluent, travelers are interested in culture, history and pageantry and, increasingly, sporting activities;

- Escaping the cold winters in Russia is a prime incentive for foreign travel;

- Moscow generates the highest outbound travel demand, more than 70% of the total. St. Petersburg is the second most important source of foreign travelers, though demand is growing rapidly from secondary provincial cities such as Yekaterinburg, Novosibirsk and other cities with populations of more than 1 million;

- Most growth in first-time travelers is coming from the emerging middle classes, with the main demand from Russians aged 30 to 45 years of age;

- Young professionals aged 20 to 30 years old and the offspring of very affluent Russians (called in Russia the "golden youth") are also enthusiastic travelers and are most likely to opt for European destinations;

- Russian luxury travelers tend to be young and active, with an average age of 44 and the majority living in Moscow;

- The most traveled segments among Russians, with the exception of the "golden youth" category, are those workers for foreign companies, banks, in the energy sector or government posts;

- An increasing number of Russian outbound travelers have studied abroad; and

- Russians are beginning to travel to "natural" environments, but Russian tour operators catering to that segment state that, by and large, Russians want a natural environment without compromising luxury and comfort.

However, while Russians are passionate travelers, the recession has hit the country hard. Russia has experienced some of the most negative effects of the downturn. Russian consumers have pulled back considerably on their expenditures and are expressing a great deal of concern over salary cuts, job losses, a weaker ruble and future prospects. This is reflected in current statistics:

the Federal Tourism Agency reported that the number of Russians vacationing abroad in the first three months of 2009 dropped by 25% when compared to the same period last year. More recent statistics are not yet available, but it is likely that this trend will continue at least through 2009 until Russia's economic situation has stabilized.

Climate Change, Water Resources, and Sustainable Tourism and Adventure Travel in Russia

Russia is an immense country, which has wide expanses that are rural and un-developed. There are vast stretches of tundra, taiga woodlands, and steppes that stretch across the vast expanses of the Eurasian continent. There are numerous small towns spread throughout Russia, many with old cloisters, castles and other historical sites and rich cultures and traditions. Russia has 15 cultural and 8 natural World Heritage Sites and 25 applied for. It is a multi-ethnic, multi-religious, multi-language society, offering travelers a wide range of experiences.

There are also the many big rivers such as the Volga, Lena and Yenisei and the famous Trans-Siberian Railway, which is one of the longest, continuous-service rail trips in the world, and the Trans-Mongolian line from Moscow to Beijing. Outside of Moscow and St. Petersburg, there is the "Golden Ring" in northwest Russia, which includes old towns dating back to the 12th century, such as Yaroslavl, Vladimir, Rostov, Suzdal, Uglich, and Pereslavl-Zalessky.

The coasts of the Black Sea and the Caspian Sea have temperate climates close to the Mediterranean region. Sochi is considered one such attractive destination on the Black Sea. (This is to be the site of the 2014 Winter Olympic Games. In the summer of 2008, UNEP requested the national government to relocate several facilities away from a protected wilderness area near the site, which the government agreed to do.) There is the remote Kamchatka Peninsula famous for its geysers, volcanoes and wildlife, and, of course, Lake Baikal and the Altai Mountains.

In the Russian Far East ("RFE"), the number of ecotourism opportunities and recreation resources is almost limitless, though severely constrained by an under-developed tourism infrastructure and a lack of investment and tourism development specialists. In our cursory examination, we found that the geographic, environmental, cultural, historic and socio-economic diversity in the region is immense. The great diversity of landscapes includes arctic territories, mountainous terrains, forests, rivers, lakes, islands, and volcanic formations. The region's tourism resources also include nature preserves and parks, rare animal species and plants, as well as cultural and historical sites.

Areas of interest include Khabarovsk Krai, Amurskaya Oblast, the Jewish Autonomous Region, Sakha Republic (Yakutia), and the Primorsky Krai. All of these areas do have inbound tour operators and a variety of other tourism resources, but the number of foreign tourists is still small, and there has not yet been any concerted effort to develop the infrastructure nor increase

marketing and promotions to key markets of interest. There are currently efforts underway to promote the region, primarily arising from local and regional organizations, but the lack of national support is evident.

Even though tourism continues to grow in Russia, it is still almost entirely focused on mass-tourism and urban-oriented tourism products in spite of the tremendous diversity in both hard and soft adventure types of itineraries possible across the country. The above listed just some of the many destinations we uncovered. However, so little of this is experienced by Western and Asia/Pacific tourists, for example.

A key challenge for Russia will be to diversify beyond its current tourism products dominated by Moscow, St. Petersburg and their surrounding environs. We noted that, in late 2007, there appeared to be a flurry of activity aimed at developing a branding strategy for Russia, called "Time for Leisure in Russia." The goal was to divide the country into recognizable regions around which branded tourism promotions could be developed and implemented. Since that time, we have been unable to uncover clear, consistent messaging or branding along these proposed lines nor a commitment by the national government to develop and implement Brand Russia.

Russia has major growth opportunities in some of the world's fastest growing niche travel markets, including adventure travel. The volcanic landscapes and hot springs of the Kamchatka and Kuril Islands in the Far East, in the largely undiscovered "Golden Mountains" of the Altai region, and the Caucasus region all offer a variety of experiences in adventure and health and wellness tourism, for example. There are also opportunities for what the Deloitte report calls "slow travel": long cruises along the country's iconic rivers such as the Volga and long train trips on its famous railroads that cross the continent.

Up-market companies such as Zegrahm & Eco Expeditions offer expedition cruises along the Kuril Island chain to Hokkaido, Japan. Zegrahm's offering takes guests along the Kuril Island chain where volcanic islands with dramatic scenery, as well as whales, birds, seals, and otters, and remnants of Japanese WWII outposts and Russian whaling endeavors surprise visitors. The company says the biggest challenge it has faced is communicating to potential travelers the beauty of the area and why to go.

However, the current political context and the uncertainties of the economy are clouding the prospects for the development of a range of niche and special-interest tourism products. Certainly, as with the country's energy policies, sustainable adventure tourism development is a long way off. While the government has created a number of special tourism economic zones for mobilizing investment and to attract domestic and foreign investment, they are mostly large-scale tourism projects costing hundreds of millions of dollars. For example, there is a planned hotel complex and water tourism center on the shores of Lake Baikal expected to cost in excess of US

$400 million, not necessarily what an adventure tourist would want to experience on his or her trip to the region.

(The following discussion on Lake Baikal is excerpted from an article in Yale Environment360, *Russia's Lake Baikal: Preserving a Natural Treasure*, June 2008.)

It is worth writing more about Lake Baikal, the world's largest, deepest and most ancient lake at 25 million years old, not only because it is one of the truly great wonders of the world but also because the policies surrounding it reflect the fundamental contradiction in the views by the national government about how to use it. Interestingly, Genghis Khan, who once ruled the Baikal region in the 13th century, declared the lake the "great forbiddance zone" where nothing could be built. This policy largely prevailed for nearly eight centuries. In 1916 Tsar Nicholas II created the first nature preserve in the Russian empire on the eastern shore of Lake Baikal.

However, in the early 1960s, the Soviet Union unveiled plans for a huge new pulp and paper mill to be built directly on the lake on Baikal's southern shore. In spite of protests by Soviet scientists and intellectuals, the plant was built and operates to this day. This was followed by the construction of a huge industrial complex on the Angara River, Baikal's only outlet, whose factories are considered some of the filthiest in all of Russia. Since that time, there has been a host of degradations – toxic wastes pumped into the lake and into earthquake-vulnerable pools along the shore from the various plants, and sewage and agricultural wastes along with pollution from construction, logging and mining running into the lake and its tributaries. Government reports document pollution releases in recent years at up to nearly fifty thousand times legal limits, with the emissions linked to widespread environmental and public-health problems.

The tourism industry has also played its part. There has been a boom in the development of resorts, hotels and second homes along the lake, and in 2007, the region was designated a special economic zone (referred to above) for tourism, which authorities hope will attract a billion euros in investment and a million new visitors a year. Technically, Baikal's entire shoreline is protected, but the nation's laws are rarely enforced. A recent government inspection found 500 illegal homes on the lake's shore, causing serious pollution problems nearby, but follow-up actions and penalties are rare.

There are some encouraging signs, however, ones that we fully support and could represent the wave of the future for Russia in sustainable tourism development. Through local efforts new low-impact businesses are being created that can help wean the region away from dirty industries; to develop low-impact, sustainable tourism products rather than large-scale, mass-tourism-oriented projects, such as home-stays, small inns, native guides and leave-no-trace activities such as hiking and kayaking. A number of activist local groups are marshaling support not only locally and regionally but internationally to protect the lake from further non-sustainable human

encroachment. Two such efforts are being undertaken by the environmental group Baikal Environmental Wave (protecting the lake and likelihoods and communities of local residents) and the Great Baikal Trail Organization (responsible over the last five years for building and improving a network of 500 kms of trails connecting local communities with 2,000 volunteers from around the world).

Around the country, there are also quite a few small, adventure-travel companies, providing low-impact trips to many of the sites discussed above. However, in general, the national and regional infrastructure to support their sustained development does not yet exist. It is not that there are not strong voices speaking out for the importance of sustainability in both the nation's energy and tourism policies, as we are seeing in Lake Baikal; it's simply that the political will is not yet there on the national level.

Another key missing element is the lack of cooperation amongst all of the different stakeholders in the tourism industry, not only within the national government itself, but between the national government and regional and local governments, NGOs, the private sector, and so on. Until this political context shifts, it is hard to imagine that Russia will realize its potential in travel and tourism, and certainly not in adventure travel. Having said that, it may very well be that the model for Russia will be bottoms-up: local and regional groups crafting their own sustainable, small-scale tourism policies and pushing governments to accept them.

The Deloitte Russia report concludes thoughtfully:

"A key challenge in the future years will be the development of an attractive and cohesive 'Russian brand,' and the sustained deployment of marketing resources to sell Russia overseas. Today's international tourists are continually pushing their personal travel boundaries and are hungry to explore new destinations. Decades of secrecy and inaccessibility have helped to intensify the air of mystery and exoticism surrounding Russia in the imagination of many these travelers."

India

Overview

"So far as I am able to judge, nothing has been left undone, either by man or nature, to make India the most extraordinary country that the sun visits on his rounds. Nothing seems to have been forgotten, nothing overlooked." (Mark Twain, *Following the Equator*) Well, except perhaps water, which we will discuss in later sections. However, it is readily apparent that India is an astonishing country – its geography, its incredible array of cultures, religions, races and languages, the sheer diversity it encompasses. It is the seventh largest country in the world with the second largest population and a total land area of 1.3 million square miles.

Set apart from the rest of Asia by the Himalayan Mountains, it is bounded on the west by the Arabian Sea, the east the Bay of Bengal and the south the Indian Ocean. It measures almost 2,000 miles from north to south and approximately 1,900 miles east to west. It has a land frontier of 9,445 miles and a coastline of 4,671 miles. The country has six major climatic sub-types, ranging from arid desert in the west, alpine tundra and glaciers in the north, and humid tropical regions supporting rainforests in the southwest. Many regions have starkly different microclimates within them. Approximately 22.8% of its land area is forested, and protected areas as a percentage of total land area is 5.2% (World Resources Institute, 2003).

Its 28 states and seven union territories provide virtually every kind of landscape and every kind of tourism experience imaginable. In particular, India has the potential to provide an exciting array of adventure-travel products and experiences across the expanse of the subcontinent. It is beyond the scope of this summary to list all of the unique characteristics of the country's physical attributes. For the purposes of this discussion, we will focus on India's river systems, the lifeblood of India.

The ice mass covering the Himalayan-Hindu Kush mountain range is the third largest in the world, after the two polar icecaps, and is the source of the nine largest rivers in Asia. These glacial masses store precipitation in the form of snow and ice, regulating water distribution and providing continuous flows during the dry months.

India has around 14,500 km of inland navigable waterways. There are twelve rivers which are classified as major rivers, with their total catchment areas exceeding 2.5 million km or 976,000 square miles, representing 70% of India's total outflow. All major rivers of India originate from one of the three main watersheds: The Himalaya and the Karakoram ranges in the north; Vindhya and Satpura range in central India; and the Sahyadri or Western Ghats in western India.

The Himalayan river networks are snow-fed and provide a perennial supply of water throughout the year. The other two river systems are dependent on the monsoons and shrink into rivulets during the dry season. The Ganga (Ganges)-Brahmaputra-Meghana system has the largest catchment area of 1.1 million km (420,000 square miles), flowing southeast and draining into the Bay of Bengal. The Ganga originates from the Gangotri Glacier in Uttarakhand. The Western Ghats are the source of all Deccan rivers, all draining into the Bay of Bengal. These rivers constitute 20% of India's total outflow. The Chambal, a tributary of the Ganga, originates from the Vindhya-Satpura watershed, and flows eastward. Several other rivers that originate in this watershed drain into the Arabian Sea in Gujarat and constitute 10% of the total outflow.

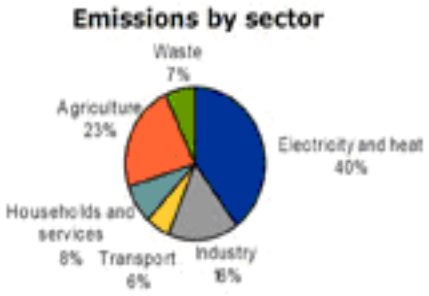
India also has an extensive wetland ecosystem; the Indian government has identified a total of 71 wetlands for conservation, which are part of a number of sanctuaries and national parks. Mangrove forests are present all along the Indian coastline, and the country's mangrove area comprises 7% of the world's total mangrove cover. The Sundarbans delta is home to the largest mangrove forest in the world and lies at the mouth of the Ganges, spreading across areas of Bangladesh and West Bengal. It is a World Heritage Site. The area is known for its diverse fauna, being home to a large variety of species of birds, spotted deer, crocodiles and snakes. Its most famous inhabitant is the Bengal Tiger.

Boats rest in thick mud in the Sundarbans of West Bengal.

India is now facing a major challenge of resolving the inherent conflicts between economic growth and the effects of this rapid development on the global climate going forward as well as on its own unique ecosystems. Clearly, economic development is the only way to raise many of its citizens out of extreme poverty, and yet, the degradation of the land will bear many costs for its citizenry as the country moves into the future.

The country's emissions per capita are well below the developing-country average, and certainly hugely below the average for developed countries, though there is a trend of strongly increasing absolute emissions. In fact, India is now the fourth largest GHG emitter in the world and has very high emission rates per GDP. It also has very high emission intensity for electricity generation because of a large share in the usage of coal as an energy source (54% of total), followed by oil at 33% (World Resources Institute). It also has a high share of methane emissions from agriculture (primarily rice fields and animals). Carbon-dioxide emissions from land-use changes are also becoming a concern as rapid deforestation is degrading more than 50% of India's land area (USAID, India, Global Climate Change, May 2008).

Electricity and heat generation is the largest contributor to emissions at 40% of the total, with agriculture at 23%, industry 16%, households at 8% and transport 6%. However, there is still a large number of people without access to modern energy (about 57% of the total population) as well as transportation.



India, heavily dependent on oil and "dirty" coal, will face challenges in the future in meeting its rapidly increasing energy needs while trying to increase energy efficiency. Because of India's dependence on imports of fossil fuel (70% of India's oil is imported), continued economic development could be increasingly costly to meet. Energy-intensive industries may be particularly hard-hit and need to begin investing in cleaner technologies to reduce costs.

The country is clearly physically vulnerable to the impacts of climate change. It is predicted that India will experience as a result of climate change melting glaciers, rising sea levels, changing rain patterns, and diminishing water supply. These physical impacts could lower agricultural output (up to 5% for a 1.5ºC rise in temperature), which is highly dependent on traditional weather patterns, namely, the annual monsoon season.

The following is a list of 10 facts from the Allianz/WWF India Climate Scorecard:

- A one-meter rise in sea level could displace millions of people in India, a country with a coastline of almost 4,700 miles;

- The Gangotri Glacier, the source of the Ganges, is retreating at a speed of about 30 meters/year, with warming temperatures likely to increase the rate of melting;

- Annual coal consumption in India has more than tripled since 1980;

- According to Oxford University research, the total number of flood-zone refugees in India alone could reach anywhere between 20 and 60 million. Sea level rises could also prompt an influx of millions of refugees from Bangladesh;

- In July 2005, the eastern Indian state of Maharashtra was hit by the hardest monsoon rains ever recorded. Nearly a meter of rain fell in 24 hours, causing extreme flooding in Mumbai and elsewhere in the state;

- According to the United Nations Development Program, India's carbon dioxide emissions increased between 1999 and 2004 by 97%, one of the highest rates in the world;

- Per-capita carbon dioxide emissions in India are still low. The average Indian is responsible for roughly six percent of the CO2 emitted by the average citizen from the United States;

- On average, floods affect about 5,000 square kms of land and 4.2 million people in India each year;

- The International Energy Agency expects Indian national energy consumption to more than double from 2002 levels by the year 2020, increasing from 116 to 252 Gigawatts;

- According to the Indian Ministry of New and Renewable Energy, the renewable power capacity was around 8 Gigawatts at the end of March 2006, roughly 6.5% of total power generation capacity.

India's Vulnerability to Climate Change and Water Scarcity

India was named earlier this year one of the top 10 climate-affected nations in the world by the UN World Meteorological Organization ("WMO"). Six of the other nations were in Asia and include the Philippines, South Korea, Indonesia, Vietnam, China and Afghanistan. With climate changes threatening agriculture in Asia in particular, WMO is recommending increasing investments in urban and indoor agriculture, sustainable farming practices, and seasonal prediction and early-warning systems, particularly to guide farmers on when, where and what crop is best to grow.

India is already experiencing changes in climate and the impacts of climate change, including water stress, heat waves and drought, severe storms and flooding, and associated negative consequences on health and livelihoods. Climate projections for India include the following:

- Climate change is predicted to amplify current levels of weather variability and may fundamentally change many hydrological systems;

- Glaciers are melting and retreating at an average rate of 10-15 meters per year. If the rate increases, flooding is likely in river valleys fed by the glaciers, followed by diminished water flows in the future, resulting in water scarcity for drinking and irrigation;

- Rising sea levels could submerge coastal areas and also infuse salt water into freshwater sources;

- All climate models predict that India is likely to experience a warming of 0.5ºC by the year 2030 and a warming of 2-4º C by the end of this century, leading to higher levels of tropospheric ozone pollution and other air pollution in major cities;

- Increased frequency of extreme weather conditions, such as droughts and floods. Some of India's river systems are already highly flood-prone;

- Increased, rapidly changing and unpredictable precipitation events, including monsoonal rains, likely to come in the form of fewer rainy days but more days of extreme rainfall events, with increasing amounts of rain in each event, leaving to significant flooding. This will be very disruptive to the agricultural-production cycle, with a decline of crop yields of up to 30% in India and other South Asian countries by 2080; and

- There is likely to be an increase in the incidence of more severe, vector-borne diseases such as dengue, and bacterial and arboviral diseases.

India has a fast-growing water-scarcity issue across the whole sub-continent. This situation is being exacerbated by the current deficit rainfall in India. Total rainfall in the nation this year through June was 19% below average, pulled down by the driest June in 83 years (India Meteorological Department) at the beginning of what is considered the monsoon season. Water availability is under threat both from increased variability and unpredictability in supplies and growing demands. Climate change is producing a situation of lower-than-average river flows but also higher hydrologic variability, causing more frequent floods and droughts.

There are also regions where runoff is plentiful where it is not needed; where runoff is plentiful when it is not needed and where it can only be stored under certain circumstances; and where there is intensive water use that leads to water-quality degradation.

Higher climate variability will put greater demands on India's water infrastructure and people. It is equally an issue for households, food production and industrial development. There are extremely

tough options to consider for increasing supply, and most industry observers believe that demand-side management (for example, conservation) will help but will likely not be enough. India's average water footprint is 980 m3/capita/year, well below the global average of 1,243 m3/capita/year.

Agriculture is the single largest user of water, consuming more than 80% of usable freshwater. Currently, about one third of India's agricultural land is irrigated, almost double the world average, and if irrigation is expanded, the pressure on water resources will intensify. Demand for water is rising dramatically as a result of expanding agriculture needs, increasing industrialization, urbanization, and population growth, yet India does not have a consistent legal framework for dealing with water users' rights, though there is social pressure in favor of individuals over industrial users in conflict situations. The operational costs in water-intensive sectors, especially those located in water-scarce regions, including agriculture, food and beverage, manufacturing, and power generation, will rise as water becomes scarcer, and supplies may well be disrupted.

India's Climate-Change and Water-Infrastructure Policies

On June 30th, 2008, the Indian Prime Minister's Council on Climate Change released India's National Action Plan on Climate Change. This document offers a list of eight technological efforts, with solar energy being given a key part in next-generation energy research and development. The current plan, the 11th to date, covers the years 2007 – 2012. The plan is intended to deliver maximum benefits for climate change mitigation and adaptation in the broader context of promoting sustainable development: solar energy efficiency, sustaining habitat, water, sustaining

the Himalayan ecosystem, green India, sustainable agriculture and sustainable knowledge for climate change. In common with other developing countries, most particularly Brazil and China, however, India considers the solution to the world's climate-change problems to be primarily the responsibility of the developed, industrialized world; it has resisted efforts for limits to be placed on its own GHG emissions.

Two of the eight sector-specific missions in the plan deal with the different aspects of water meant for agriculture, namely the National Water Mission ("NWM") and the National Mission for Sustainable Agriculture ("NMSA"). Under the umbrella of the NWM, those issues that apply to water for agriculture include the management of surface-water resources, the regulation of groundwater, upgrading of storage structures and drainage systems, conservation of wetlands, wastewater reclamation, equitable access, and regulatory structures for basin-level management. The NMSA has outlined four key areas: dry land agriculture, risk management, access to information, and biotechnology.

While the plan was launched with a great deal of fanfare, critics say that the detailed action plans for each area are yet to be worked out, and the document contains virtually no targets or timetables. The Climate Challenge India Coalition states that it is not a new agenda based on ensuring climate security or a strategy for a low-carbon pathway for India. The Coalition would like for India to adopt a low-carbon growth plan and make sustainability the organizing principle around its economic development agenda.

The country is fully supportive of market tools such as the Clean Development Mechanism (CDM), discussed previously. India now accounts for more than one third of all CDM projects registered worldwide (241). The government can also claim credit for being the first country to establish a ministry for non-conventional energy sources and already has the world's fourth largest installed wind-power capacity. In addition, it has had an energy labeling program for appliances in place since 2006. The government is encouraging the development of clean-coal initiatives, including reduced subsidies for companies that are not implementing efficiency improvements where possible.

Other existing domestic policies include mandatory energy audits for large, energy-consuming industries; replacement of all incandescent light bulbs with compact fluorescent lamps; establishment of an energy-efficient building code for large commercial buildings; and a higher electricity tariff for large-scale electricity users. Under the national fuel policy, the following measures have been implemented: new four-wheel vehicles are to meet European emissions

standards by 2010; conversion of public transport and taxis to compressed natural-gas fuel; expansion of urban mass-transit systems; and expansion of ethanol-blended gasoline sales.

The private sector in India is beginning to look at investing in clean energy, energy conservation and efficient smart buildings and green products. Many business leaders now view climate change as an emerging consumer and competitiveness issue and want to be seen in the forefront of the green movement. Domestic wind-power company Suzlon is now the largest in Asia and fifth largest globally, while Bangalore's Reva car is now the world's biggest selling electric vehicle. If given a supportive policy environment, India's entrepreneurial class could go a long way in helping the country find a low-carbon, economic-development path. Some municipalities are also starting to lead the way. For example, Bangalore is deploying low-emissions mass-transit systems, while Delhi is subsidizing the purchase of Reva electric cars.

India's Tourism Sector

WTTC's 2009 Travel and Tourism Impact report on India provides certain key data points for 2009:

- 6.0% of GDP (approximately US$ 67.3 billion);
- 6.4% of employment (3.8 million jobs);
- 0.2% T&T GDP growth; and
- 6.0% of exports.

Out of 181 countries, its T&T industry is ranked #14 in absolute size but #144 in relative size (that is, in terms of its contribution to the national economy) and #5 in terms of growth rate forecasts. Out of 6 countries in South Asia, it is ranked #1 in absolute terms, #3 in relative terms and #1 in terms of projected growth rates. Of the BRICMs, only India and Mexico grew in terms of the number of arriving tourists between 2007 and 2008, both in the 5%+ range, well above the global average of 2%. However, India's expenditures per arriving tourist were $2,185, up 4.2% between 2007 and 2008, far above any of the other BRICMs, while Mexico's declined by 2.2% to $688 per arriving tourist.

Rajasthani man leading Marwari horse near Jaipur.

India is ranked # 62 (out of 133 countries) in WEF's 2009 Travel and Tourism Competitiveness Index. Its best score was in the area of ICT infrastructure, followed by health and hygiene, tourism infrastructure and policy rules and regulations. Some of its worst scores were

in availability of qualified labor, and surprisingly, natural and cultural resources.

Despite the world economic crisis, India's economy has remained in decent shape and is still expanding. The hotel building boom is continuing across the country as both international and domestic chains are moving forward with development plans. Limited tourism infrastructure, however, still restricts tourism movements around the country, though a variety of related infrastructure improvements are underway. For example, Hyderabad and Bangalore both opened new airports in 2008, and modernization of airports in both Mumbai and Delhi are scheduled to be completed in 2010.

This airport expansion, coupled with the government's liberalization and open-skies policies, has led to the introduction of a number of low-cost carriers ("LCCs"), has making domestic air travel affordable for a great number of domestic tourists. In 2007, there were at least a dozen LCCs operating on domestic routes in India, and there were several more offering competitive airfares on international routes. The market share of LCCs rose to 49% in 2008. In addition, Indian Railways has played a vital role in providing better connectivity throughout the country, most particularly for domestic tourists.

Deloitte reported in its **All Eyes on India** that India as a tourism product has suffered from being considered a high-cost destination, partly a result of limited access, most particularly from long-haul source markets. The report also notes that the size and spread of the tourism industry in India cannot be solely measured by the number of international tourists: while international visitor volume is just a little over 5 million, the domestic tourism market is estimated to be over USD $560 million in 2008 and growing rapidly.

India has also been hampered by the limited number of hotels and other accommodations throughout the country. This has led to some of the most costly hotel rooms in the world in 2007, most particularly in Mumbai, Delhi and Bangalore. Several unbranded hotel chains have begun to emerge, though these also command relatively high room rates. The government is concerned that, if this trend continues, it will deter the continued expansion of the tourism industry in India. The country does permit foreign direct investment in hospitality at 100%, unlike other sectors of the economy, though supply is still a long way from catching up to demand. The national government is also granting tax concessions to promote infrastructure build-out. However, the hospitality sector is expected to see investments of over $11 billion in the next two years alone, with 40 international hotel brands poised to enter the Indian market within the next two years.

To promote domestic tourism in particular, the Ministry of Tourism is dedicating money to the development of 16 “mega tourism projects” around the country, with another six in the pipeline. The government has also identified 139 spots for promoting rural tourism and is providing Rs .5 million at each place for infrastructure development and capacity building.

The government has also become proactive in its international advertising and promotional activities through its “Incredible !ndia” campaign in 2007-2008 and its “Visit India” campaign in 2009. The “Incredible !ndia” campaign has been praised by a variety of industry analysts and destination marketing specialists as innovative and effective in branding India as an exciting place to visit.

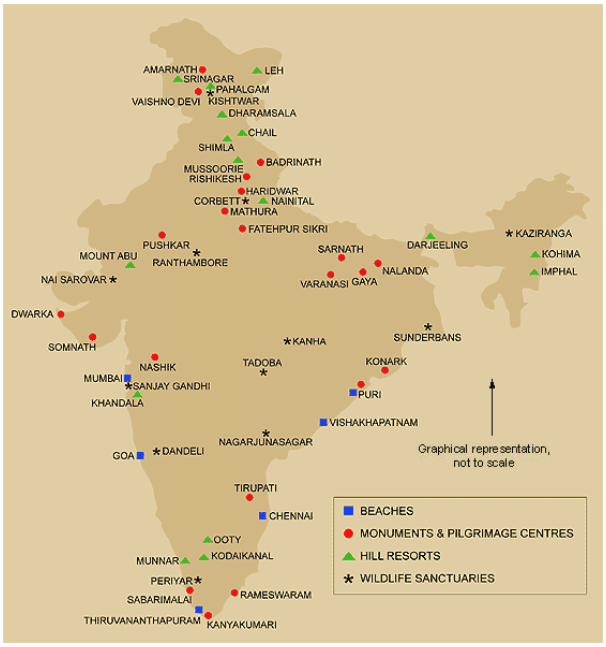
The “Visit India” 2009 campaign by the national government is providing, in conjunction with a variety of private partners, a range of incentives to encourage foreign tourists to choose India for a vacation. It is aimed not only at countering the effects of the economic downturn but also the negative perceptions of India as unsafe as a result of the terrorism attack in Mumbai in November 2009. Between April and December 2009, many member hotels of the Hotel Association of India will offer complimentary stays, and domestic air carriers will offer discount and free-traveling-companion schemes in air travel to pull in international traffic.

The Indian Association of Tour Operators is conducting a series of road shows in 20 cities in different countries (including Singapore, Malaysia, US, UK, Japan, Australia, Ireland, Canada and South Korea). Many tour operators are putting together special packages targeted at traffic to specific markets. The road-show focus will be on promoting eco- and village tourism products, apart from the other new destinations that represent India’s varied tourism offerings. Of the 139 rural destinations, the “Visit India” 2009 campaign is showcasing 15 of them, all developed in collaboration with the United National Development Programme (“UNDP”). The locations are in such areas as Gujarat, Kerala, Tamil Nadu, Andhra Pradesh, Kamataka, Rajasthan, West Bengal, Sikkim, Assam, Madhya Pradesh, Bihar and Himachal Pradesh. The Ministry is also developing festivals in conjunction with these sites to provide a platform for exhibiting and selling handicraft products and for cultural performances.

Drummer leading a pilgrimage through Kerala’s interior.

India currently has 14 tourism promotion offices overseas, with Beijing being the last one opened in April 2008. This opening marks India's first initiative to increase the number of Chinese tourists visiting India. As a close neighbor, it still represents a very small fraction of total arriving tourists. The Ministry of Tourism is running a number of programs to increase its exposure to Chinese tourists, including a familiarization program for Chinese travel agents and tour operators, and the introduction of tailor-made tours and websites for Chinese tourists.

India has an increasing array of exotic locales around the country, quality resorts and a 5,000-year-old rich culture and a wide variety of activities and experiences to promote. It has 22 cultural and five natural world heritage sites and 29 sites submitted for consideration. The following map is a pictorial representation of the country's current offerings as presented by the Indian government:



Profile of the Inbound Traveler to India

Overall, tourist arrivals grew by almost 4.0% between 2007 and 2008 to a total of 5.28 million tourists. Travel expenditures per arriving tourist in India are some of the highest in the world, growing from $2,111 in 2007 to $2,240 in 2008.

What stands out about India's inbound tourism statistics is the diversity of source countries as well as the strong growth from almost all of them, at least until 2008. In addition, there is good distribution amongst a variety of source countries, with the US #1 and the UK a close #2 with a combined 29.9% of the market in 2008, though down from a 31.4% market share in 2007. Both

have experienced average annual growth rates of between 21% and 24% between 2003 and 2007, though arrivals from the UK slowed between 2006 and 2007 to 8.4% followed by a decline of 2.5% between 2007 and 2008. Bangladesh comes in at #3, with 10.3% of the 2008 market, growing at 12.8% between 2007 and 2008.

The next four sources, Canada, France, Sri Lanka, and Germany, all have between 3.9% and 4.2% of the market and grew between 1.5% (France) to as high as 10.9% for Germany. Emerging, double-digit-growth source countries include China, Indonesia, Thailand, Russia, Sweden, Norway, Oman, the United Arab Emmirates, Afghanistan, and the Maldives, a very diverse group indeed.

In 2009 so far, after a decline in foreign tourist arrivals, ranging between 10.6% and 17.6% for the first three months of 2009, as compared to the corresponding periods of the previous year 2008, the month of April saw a slowing decline of only 3.5% compared to April 2008. Arrivals during the month of May 2009 were 294,124. Tourism foreign exchange earnings, however, rose 8.7% to 3,249 crore in May 2009 compared to May 2008. In June 2009, the number of arrivals increased 0.2% to 341,000; while flat over the same month last year, the trend shows signs of stabilization and reversing the previous downward trend. Foreign exchange earnings in US $ terms during the month of June 2009 at US $796 million were the same as during the month of June 2008. In general, India is holding its own in a grim environment in many places around the world.

Profile of the Indian Traveler

India's growing openness to the outside world has stimulated an interest in foreign travel, especially among the younger generations. More Indian students are studying in other countries than those of any other nationality, except perhaps China. Approximately 50% of India's population is under 25, and many express interest in traveling to a wide range of destinations. Over 180 million Indians are English-speaking, three times the population of the UK. Indians have become passionate travelers, both domestically and internationally. The country's emerging middle class, estimated to be over 350 million today (more than the entire population of the US), is very keen on holidays abroad according to numerous in-country surveys. Indian Market Research Bureau revealed that the highest social desire for the Indian middle class, after buying a house, is a holiday abroad. As many as 76% of Indian vacation seekers propose to visit an international destination for their next holidays (Thomas Cook India survey).

The Indian outbound market has grown from 3.7 million in 1997 to 10.9 million in 2008, with average annual growth rates of 16% since 2004. International outbound-travel expenditures have grown from US$ 1.3 billion in 1997 to $9.6 billion in 2008. UNWTO

estimates that India will account for 50 million outbound tourists by 2020; the **Kuoni Travel Report India 2007** predicts that total outbound spending will cross the US$ 28 billion mark in 2020. With over 28 million passport holders who are potential travelers, the outbound source market is wide, varied and complex.

Indian travelers are above-average spenders, increasing their travel expenditures per departing tourist from $840 in 2007 to $884 in 2008. Indians travel to a wide variety of destinations around the world. The top 12 destinations in 2008 are as follows: Singapore (778,303); Kuwait (673,671); Saudi Arabia (601,922); US (598,971); Malaysia (550,738); China (436,625); United Kingdom (359,237); Hong Kong (231,500); Oman (141,451); Switzerland (132,107); Australia (116,001); and Canada (110,890).

Beach vendor in Kovalam, Kerala.

The main source regions in India are the west and north (including central India), accounting for about 65% of all outbound travel, followed by the south (25%) and the east (10%). According to PATA, 40% of all outbound travel by Indians is for business purposes. International leisure travelers from India are likely to be first-time visitors, particularly to Europe and North America. They are generally male (65%), well educated and belong to the upper socio-economic strata of society, with majority married (75%) and with children at home. Two-thirds of leisure travelers tend to holiday abroad with family.

Key travel motivators of potential first-time visitors are culture/sightseeing. For repeat visitors, Indians are also interested in culture and sightseeing but also look for touring/driving holidays, snow/ski holidays, and holidays in the mountains. The majority of the potential visitors are likely to undertaken a multi-country vacation when in Europe. The top five factors that influence destination selection include: safety and security; variety of things to see and do; overall image of holiday destination; good tourist facilities and infrastructure; and the ease of obtaining visas. Other factors include friendliness of the environment, good weather, availability of holiday packages, availability of Indian/vegetarian food, cultural affinity and cost/value for money.

Indian travelers, particularly first-time travelers, tend to be price-sensitive, and group travel forms a large part of the travel market. The average stay of leisure travelers is between 10 and 15 days. Repeat travelers have begun to exhibit a thirst to explore new destinations and experiences. They are not looking for “sun-and-beach” vacations but rather sight-seeing and shopping. Culture is also important.

Accounting for over 70% of the leisure trips and 63% of the business trips, Asia and the Middle East are currently the most population destination regions for Indians when heading overseas. The US is the #1 destination in the west, with the UK, Switzerland, Italy and Canada also in the top 15 destination countries. Regions such as Europe attract a greater percentage (18%) of Indian travelers for business than pleasure (14%). However, this may shift quickly going forward. Typically, the Indian traveler has chosen various Southeast Asian destinations for their first international travel experience, primarily a result of the value-for-money offerings, proximity of the destinations, and destination awareness amongst Indian consumers.

However, this appears to be rapidly changing as Indian travelers are becoming more informed about a wide range of destination alternatives. Indians are now opting to experiment with new places and tourism types, as is apparent in the below list of emerging destinations.

To reinforce the notion that Indians are avid leisure travelers, the Ministry of Tourism currently estimates the domestic tourism market to be around 560 million travelers and growing rapidly. It does appear, however, there are limitations in terms of the availability of accommodations and related tourism infrastructure and services in target areas of interest, for example, in the hill country in the north and along the coastlines on either coast. In addition, in a strongly “faithful” culture, religious travel accounts for almost 20% of the total trips taken by the middle class of India. It is not considered a “niche” sector; it is viewed as an important part of the leisure-travel experience.

It is also worth noting that Indians are active online travel consumers, a fact that has not gone unnoticed by various industry analysts and others. It is estimated that the Indian online travel market will reach US$ 6 billion by the end of 2010. India boasts the largest travel web site in the entire Asia/Pacific region in terms of transaction volume, the government-owned Indian Railways.

Owing in large part to the popularity of rail travel in the country, the web site has been a key driver of online travel, e-commerce and competition across a range of supplier categories. Another compelling factor that has spurred online growth has been a high level of deregulation, especially when compared to Japan and China. This has permitted entrepreneurship to flourish.

This vibrancy has extended into air carriers, online travel agencies, hotels, bus companies, tour operators, social networking sites and others, all of whom are competing to attract and retain Indian travelers (PhoCusWright).

To extend its reach into India, Travelocity Global acquired in August 2009 TravelGuru, an Indian online travel portal. TravelGuru had raised $25 million in venture capital from Battery Ventures and Sequoia Capital, both US venture capital firms with operations in India. TravelGuru is India's leading online hotel distribution network. It distributes a portfolio of more than 4,000 hotels in India, most of which are independent properties, and it has a strong domestic customer base. Travelocity Global is one of the world's largest online travel companies, with its Travelocity, lastminute.com and ZUJI businesses worldwide generating more than USD$10 billion in gross travel sales annually. Travelocity plans to keep both of its online travel businesses in India as standalone entities.

Climate Change, Water Resources, and Sustainable Tourism and Adventure Travel in India

The government is focusing on promoting a variety of new tourism products including caravan tourism, heliport tourism, medical and health and wellness tourism and adventure tourism in addition to its more traditional products. The Indian healthcare and medical tourism market is expected to reach USD $2 billion by 2012.

India already ranks as the second largest destination after Thailand for medical tourism, with 450,000 patients from abroad having received treatment in India during the year 2007 alone.

Questrails "Rapidfire" campsite along the Ganges River near Rishikesh. Photo courtesy Questrails.com.

Medical tourism is currently focused in South India where the city of Chennai attracts around 45% of medical tourists from foreign countries. As an extension of the health and wellness tourism market, India's tourism ministry is marketing its "holy-land" attributes to attract visitors to visit for spiritual pilgrimages, spa offerings, yoga and contemplation retreats and so on. Many

destinations include world-famous temples, mosques and churches that combine with yoga and ancient healing practices, for example.

The Ministry is developing new policy guidelines for the development of caravan and heliport tourism. Both of these efforts are viewed as creative ways to respond, over the short term, to the difficulties of getting to remote locations and to finding appropriate accommodations in which to stay. Under the caravan concept, travelers will be put in caravans fitted with all of the modern conveniences and taken around the countryside. This would provide accommodation facilities in the absence of hotel-room availability. Heliport tourism will aim to promote hilly and remote areas with good tourism potential but not easily accessible by either road or rail networks.

In December 2008, the Minister of Tourism and Culture inaugurated its Sixth Annual Convention of the Adventure Tour Operators Association in Delhi. The country is promoting India as one of the most exciting adventure tourism destinations in the world and intends to focus marketing campaigns in the future on the innumerable adventure and eco-tourism opportunities in the country. The government's particular focus is on Ladakh, the Sariska Wildlife Sanctuary, Keoladeo Ghana national Park, Corbett National Park and many others. Eco-tourism opportunities are focused at the moment in such areas as Kaziranga National Park, Cir National Park and Kanha National Park.

The Indian tourism industry is not without its critics. Some still say that, in spite of an incredible array of destinations, a mind-boggling number of landscapes, a phenomenal 5,000-year-old history and an ancient civilization, it has done a poor job of attracting foreign tourists, with many much smaller countries around the world attracting many more tourists than does India, with such examples given as Ukraine, Croatia, Saudi Arabia, etc.

Other criticisms of the Indian hospitality industry include the following (HVS Hospitality Services, January 2009):

- Absence of a civil aviation policy;
- Funding issues hampering the operations and growth of most airlines;
- Inefficient airport infrastructure;
- Insufficient air-traffic management controls in place;
- Poor infrastructure support in the form of hangars, hotels, and cargo set-ups;
- Tourism ministry not equipped with executive powers to bring about required changes;

- Absence of an updated tourism master plan;
- Tourism considered more a state, not a national, subject, leading to a fragmented, piecemeal approach;
- Industry status to tourism not granted by all states, with many local governments unaware of the potential;
- Tough lending norms for the tourism business by Indian banks;
- Multiplicity of taxes;
- Opaque licensing process major reason for delay of projects;
- Archaic laws governing operations of hotels;
- Hotel classification/rating system outdated;
- Acute lack of value-for-money propositions; and
- Poor tourism infrastructure and on-ground support.

The Indian Tourism Industry is aiming to attract 10 million tourists to India by 2010, though given the economic slowdown around the world, this goal seems a bit of a stretch. Currently, the leading tourism destinations in India in terms of total tourist arrivals are Andhra Pradesh, Uttar Pradesh, Tamil Nadu, Karnataka, and Rajasthan.

While “sustainability” is a popular term used frequently in Indian tourism contexts, there does not seem to be a uniform, top-down policy for ensuring that all of the tourism development initiatives incorporate the overarching concept of sustainability. Given the extent and depth of India’s issues surrounding climate change, water scarcity, and the severe potential impacts on many areas where adventure tourism already exists or where it could exist if managed properly, there is a surprising lack of coordinated policy at both the national and local levels and between national and local levels.

Pursuing aggressive international promotion campaigns without first ensuring services and management policies exist to support the projected large increases in the number of tourists is dangerous. This is particularly true for adventure tourism where travelers are often found in fragile environments sensitive to encroachments.

India has succeeded in putting itself on the world tourism map. It is an exciting, exotic destination with so many different types of tourism experiences available that the world is now finding. It has very successfully marketed to a wide range of source countries. The country may be better served by building the inbound tourism base more slowly; it should steadily build its tourist base by continuing to attract a wide range of tourists from different parts of the world and producing high expenditures per tourist, rather than aiming at much higher numbers of mass-market tourists who spend a great deal less money per arriving tourist than do today's tourists. As India builds out its infrastructure to support a larger tourist base and has the policies in place to ensure the development and implementation of high-quality, sustainable tourism products across all categories, then it will be in a position to maintain its high levels of expenditures per tourist while building up the numbers.

Hitting "The Wall" on the Ganges. Photo courtesy Questrails.com.

Switzerland has only 8.6 million tourists but is the #1 rated destination in the world, and rightly so. But the Swiss are not pushing to maximize those numbers; rather, they seek to maintain the high quality, integrity and sustainability of their tourism services and to match them to the carrying capacity of the nation. For a country the size of India, it is hard to estimate exactly what the tourist

carrying capacity is, and it obviously will vary from region to region. Given the huge challenges faced by India on the climate-change and water-scarcity fronts, it will be necessary to conduct field research and analyses of what makes sense in terms of tourism development in specific regions of the nation. It may very well be that certain areas, while blessed with many compelling attributes, may not be suitable for tourism development or only at certain levels.

We believe that adventure tourism, if implemented correctly, does provide a much smaller "footprint" than most other forms of tourism, but understanding its role in economic development has to be put in a local context to understand how it should be developed sustainably. India has an important opportunity to "leap-frog" many nations in how it develops a sustainable tourism industry; the government is passionate about its country and has raised awareness with many foreign tourists about its many compelling attributes. Now it has to ensure that it can sustain this momentum moving forward and implement systematic, well-formulated policy directives that will support the development of a healthy adventure-travel industry.

A quiet campsite along the Zankar River. Photo courtesy Questrails.com.

China

Overview

China is the world's third largest country and home to approximately 1.25 billion people - nearly a quarter of the world's population. Until the early 20th century, China led the rest of the world in the arts and sciences. It has countless treasures throughout the country and has a vast array of natural and cultural resources too numerous to recount.

It also has a great variety of climates and terrains. China stretches some 3,123 miles across the East Asian landmass, bordering the East China Sea, the Korea Bay, Yellow Sea, and the South China Sea between North Korea and Vietnam in a changing configuration of broad plains, expansive deserts, and lofty mountain ranges. The eastern half of the country is a region of fertile lowlands, foothills and mountains, deserts, steppes, and subtropical areas. The western half of China is a region of sunken basins, rolling plateaus, and towering massifs, including the Himalayas, a portion of the highest tableland on earth.

The south is wet and tropical, with some rainforest coverage. Northwest China is covered in desert. In the very far northeast, close to Russia, the temperature can drop to -50ºC in the winter. In the west of China there are the Himalayas, with some of the highest mountains in the world. China's lowest point is in the Turfan Depression, at -154 meters below sea level. The Turfan Depression is also known as one of the 'furnaces' of China because of its incredible heat.

The melting snows from the mountains in the west create the headwaters for two of China's most important rivers, The Yellow and the Yangzi. The Yellow River takes its name from the yellow windborne clay dust that is blown across the north of China from the steppes of Central Asia, giving the river its yellow appearance. The Yangzi River is the longest in China and third longest in the world. The Yangzi River irrigates the rice-growing regions in the south of China.

Total land area is estimated to be 9,758,801 km², approximately 21.2% of it forested and around 3% in water. Its climate is extremely diverse, subtropical in the south to subarctic in the north. The advance and retreat of the monsoons account in large degree for the timing of the rainy season and for the amount of rainfall throughout the country. Tremendous differences in latitude, longitude, and altitude give rise to sharp differences in precipitation and temperature within China. Although most of the country lies in the temperate belt, its climate patterns are complex.

Precipitation varies regionally even more than temperature. Southern China in general has plentiful rainfall, but as one moves farther north and west it becomes scantier and more uncertain.

In addition, China experiences frequent typhoons, earthquakes, damaging floods, monsoons, tsunamis, and droughts.

Mineral and Water Resources

China has substantial mineral reserves and is the world's largest producer of antimony, natural graphite, tungsten and zinc. The country has major deposits of a variety of other minerals and ores. With its vast mountain ranges, China's hydropower potential is the largest in the world.

Based on 2005 estimates, 14.9% of its total land area is arable, with only 1.3% planted in permanent crops and the rest in temporary crops. With little land planted in permanent crops, intensive agricultural techniques are used to reap harvests sufficient to feed the world's largest population and still have a surplus to export.

China's water resources include 2,711.5 billion cubic meters of runoff in its rivers and 929.9 billion cubic meters pumped annually from shallow aquifers. 80.9% of these resources are in the Yangtze River basin.

Environmental Issues

The scale of China's environmental problems is enormous. China's 1.3 billion people account for one fifth of the world's population, but the nation encompasses less than 1% of the arable land. Virtually the entire population lives in the well-watered eastern half of the country where virtually every square centimeter of farmland has been developed. The sheer size of the population means that forests, wetlands, grasslands, and agricultural fields are stretched beyond the limits of sustainable use.

Many of the nation's rivers are polluted, and virtually all water in urban areas is heavily contaminated. Air pollution from reliance on coal is a serious problem, along with water pollution from untreated wastes and other sources. There are severe water shortages, particularly in the north. Heavy deforestation, with an estimated loss of one fifth of agricultural land since 1949 because of soil erosion and economic development, is causing desertification. The size of the Gobi Desert has increased and has now reached the outskirts of Beijing.

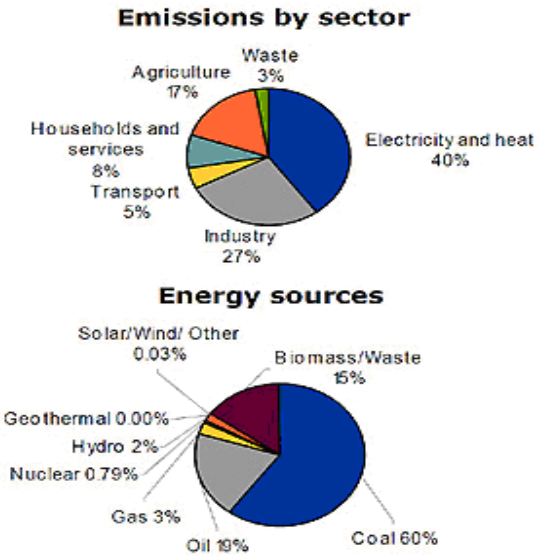
China's Vulnerability to Climate Change

In its China Climate Change Profile Allianz states: "Plagued by famine just a few decades ago, China has managed to lift hundreds of millions out of poverty. The price, however, has been environmental degradation. To survive, China will have to overcome its addiction to cheap and dirty coal."

China has surpassed the United States as the world's largest emitter of greenhouse gases. This milestone was reached faster than most people predicted just six years ago when China's carbon emissions were around 42% of US levels. These trends present major challenges not only for China but for the rest of the world. Already China is experiencing substantial negative effects from climate change: desertification, sandstorms, droughts, floods, record-high temperatures, and melting Himalayan glaciers. Industry observers are projecting declines in agricultural output, more flooding and storm damage along China's east coast and in large rivers as sea levels rise.

Morning rituals in Kunming, Yunnan

The following graphics represent China's GHG emissions footprint by sector and by source of energy:



Other key factors about China's carbon footprint are as follows (Allianz/WWF China Climate Scorecard, other news articles and reports):

- Eighty-two percent of China's energy supply comes from coal-fired power plants. China burns more coal than the US, European Union and Japan combined, and builds a new coal-fired electricity plant every 7 to 20 days;

- In 2006, there were abound 20 million cars on the road in China, up from 6 million in 2000. Private vehicle ownership increased by 23% between 2005 and 2006;

- According to the World Bank, 16 of the 20 most-polluted cities in the world are in China;

- Environmental pollution caused China about 64 billion US dollars in economic losses in 2004, approximately 3% of GDP;

- China added power capacity in 2006 equivalent to the entire power grids of the UK and Thailand combined, 90% of which is coal-based;

- Reuters reported that almost a million tons of Gobi Desert sand blows into the Chinese capital of Beijing each year. Extensive deforestation and desertification in the arid northern regions cause the dust storms;

- According to environmental consulting firm China Dialogue, warming has caused certain Himalayan glaciers to shrink by one hundred meters between 1986 and 1998. These glaciers are an important water source for the rivers that run across China and also for the drinking water supplies for the country's densely populated coastal plains. About 60% of China's 669 major cities face water shortages, with 110 of them facing critical water shortages. Beijing, for example, is short one billion cubic meters per year. In addition, 75% of China's drinking water is unsuitable for drinking and cooking, and 80% of China's seven rivers no longer support fish;

- According to a WWF study, pollution in the main stem of the Yangtze River has increased by more than 70% over the last 50 years. Almost half of the country's industrial waste and sewage is now discharged into the river;

Mr. Wu; Yunnan Province.

- According to a Chinese government report, the nation expects that the production of staples such as corn, rice and wheat could drop by as much as 37% over the next 50 years as a result of climate change. In February 2009, the government announced a severe drought emergency in eight provinces in eastern China, leaving 3.5 million people and 1.7 million livestock short of drinking water. In addition, some regions in southern, northern, and southwestern China have already approached the upper limit which is suitable for crop growth;

- Agriculture uses about 65% of annual water withdrawals in China, though it is estimated that only 45% of this water allocation ever reaches farm plots because of low rates of irrigation inefficiency as well as increasing water constraints because of growing competitive demand by municipal and industrial sectors. China uses 30 more cubic

centimeters of water than is replaced by rainwater. China's water reserves per capita are about one quarter of the global average (Clean Water Global Market Report 2009);

- A 2006 study by Chinese think tank Civic Exchange points to the susceptibility of large cities on China's east coast to rising sea levels. It cites Hong Kong and the Pearl River Delta region (the manufacturing and trading hub of southern China) as highly vulnerable to flooding and increasingly severe storms;

- One of China's chief climate experts, Lin Erda, states that, while China can expect increases of 7% to 10% in annual precipitation across the country in coming decades as a result of climate change, most parts of China, especially the northern areas, will get substantially drier. The recent droughts in the region are exacerbating a long-term problem in a naturally dry region where intensive agricultural practices are used. The northern half of China has less than 20% of the nation's water but is home to more than 40% of the population, much industry, and over 50% of the arable land. This has resulted in a water deficit in northern China exceeding 40 billion tons per year;

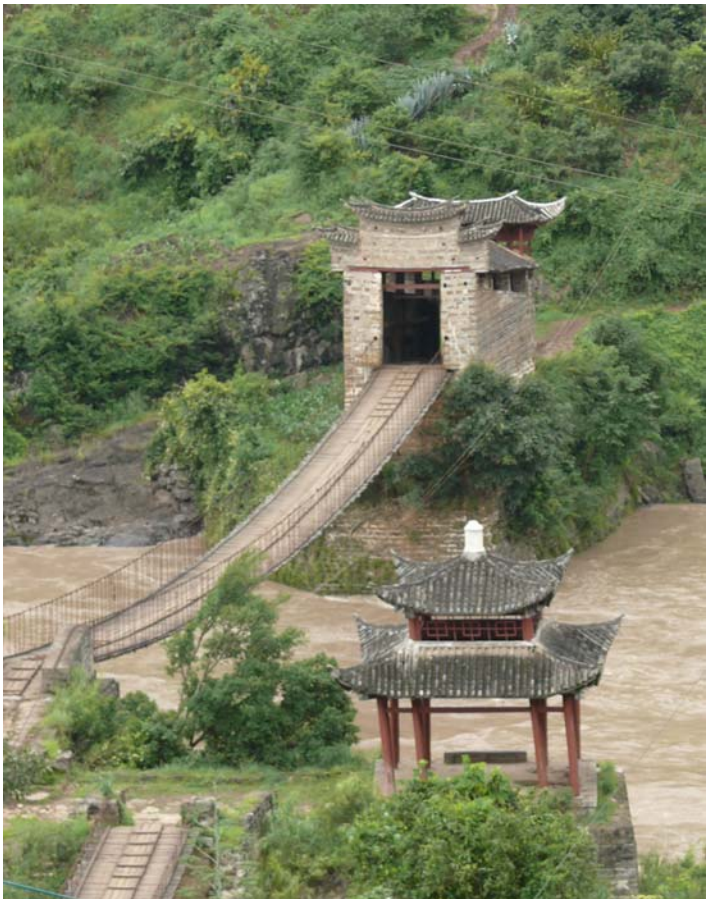
- The UK's Chief Scientific Advisor on Climate Change predicts that China's temperatures will rise above the global average and will lead to increased water shortages for potentially 1 to 2 billion people. He says that the impact of climate change is already evident in China in the blizzards and floods in China last year as well as the frequent droughts in Guangdong Province.

China's water footprint of 702 m3/capital/year is well below the world average of 1,243 m2/capita/year. Approximately 7% of the country's footprint lies outside of the country. While the country has high levels of internal renewable water resources, their distribution across the country is highly uneven, with some regions facing severe physical water-scarcity issues.

In addition, water pollution and degradation has had a major negative impact on the availability of drinking water as well as for other uses requiring pure water, such as food and beverage and pharmaceutical manufacturing. Dr. Peter Gleick, President of the Pacific Institute, cites China as a prime example of the water crisis where water resources are over-allocated, inefficiently used, and grossly polluted by human and industrial wastes, with 300 million people lacking access to safe drinking water. He believes that China has a set of water quality and quantity problems as severe as any on the planet, which will be exacerbated by climate change.

China's Climate-Change and Water-Infrastructure Policies

As with the other BRIC nations, China has rejected the necessity of any caps on emissions, with the argument that limits would impede national growth and that per-capita emissions in China are still significantly lower than in industrialized countries. Like Brazil and India, China argues that industrialized countries bear primary responsibility for the historical build-up of GHGs and should thus lead in mitigating emissions domestically as well as assist developing countries to mitigate their emissions and adapt to coming climate-related changes.



Crossing the Ni River near Gaoligonsgshan, Yunnan

However, because of many of the effects it is already experiencing from climate change, the country is starting to acknowledge that it may need to change course in how it manages its emissions policies. It has proposed some ambitious targets to reduce emissions, to support the development of renewable energy, and to encourage the production of fuel-efficient cars.

In June 2007, it released its National Climate Change Program, which outlines activities both to mitigate GHG emissions and to adapt to the consequences of potential climate change. Within the program, perhaps most challenging is China's goal to lower its energy intensity by 20%.

Other goals include more than doubling renewable energy use by 2020, expansion of both nuclear, gas and renewable-generated power to displace the use of coal-fired power, closure of inefficient industrial facilities, tightened efficiency standards for buildings and appliances and forest coverage to be expanded by 20%. (This policy does not, however, set any mandatory limits on emissions.)

The program proposed a number of policy goals:

- A 20% reduction in energy intensity by 2010;
- A target of 16% of all energy to come from wind, biomass, solar and hydro-power by 2020;
- The promotion of nuclear power, setting a goal of 5% of installed power capacity by 2020;
- Improving power-sector efficiency using very advanced power-plant technology such as supercritical and ultra-supercritical combustion technology;
- Development of a coal-bed methane industry to reduce carbon emissions;
- Goal to reduce the energy use of China's 1,000 most energy-intensive enterprises, which consume one-third of the country's energy and emit the bulk of China's GHG emissions;
- The establishment of national building codes that improve energy conservation by 50%;
- The implementation of appliance efficiency standards in order to reduce residential electricity use by 10% by 2010;
- Fuel economy standards of 36 MPG by September 1, 2008 and taxes for motor vehicles that do not meet the standards; and
- The closing of inefficient industrial facilities, many of which were in the cement and steel sectors.

In addition to the above main policies, there are 52 other separate policies aimed at controlling GHG emissions. It should also be mentioned that China is an active participant in the CDM, accounting for over 40% of the global emissions credits arising from such projects.

In 2008, the national government released a white paper titled **China's Actions and Policies on Climate Change**, which focused on strengthening government management in vulnerable sectors such as water resources, agriculture, forestry, and coastal regions; building early-warning and monitoring networks; raising public awareness; enhancing R&D investment; and employing international resources. In June 2008, China's central bank also released a tentative outline for a domestic emissions trading scheme that could cover everything from GHGs to water pollutants

and speed up its move for “greener” growth. However, a comprehensive national scheme is still a good way off given the complexity of the issues and the range of stakeholders in the issues.

Although there is not yet a comprehensive national scheme that sets specific limits and goals, China has already taken action on a variety of issues:

- While highly controversial, the world’s largest hydro-electric river dam, Three Gorges Dam, spans the Yangtze River in China’s Hubei Province and has a capacity ten times as great as the Hoover Dam;

- According to Worldwatch Institute, China invested 6 billion dollars in renewable energy development in 2005, more than any other country that year;

- Over the last decade, a variety of entities have developed large-scale wind farms in China, and the country was ranked as the fifth fastest growing wind energy producer in the world in 2006;

- The Chinese solar sector has emerged as a world leader in the production of solar, thermal, and solar-cell production, with one of China’s richest entrepreneurs the founder and CEO of Suntech Power, a company specializing in solar photovoltaic technology;

- While China’s frenetic construction of coal-fired plants have raised concerns around the world, China has emerged in the last two years as the world’s leading builder of more efficient, less-polluting coal power plants, mastering the new technology based on the use of extremely hot steam to achieve high efficiency;

- China has plans in place to build 59 reservoirs to collect water from its shrinking glaciers in the western province of Xinjiang. It will be a 10-year project which will aim to catch and store glacier runoff that might otherwise trickle away into the surrounding deserts;

- In February 2009, the national government announced plans to cut the amount of water needed to produce each dollar of GDP by industry and agriculture by 60% by 2020. This announcement confirms that the country is no longer relying on “supply-side” solutions to water shortages (such as the $60-billion, south-north water transfer scheme, which is aimed at watering the arid north with water from the giant Yangtze River in the south).

The National Intelligence Council in its **Special Climate Report on China, April 2009**, ranks China today lower in resilience to the effects of climate change than Brazil, Turkey and Mexico but higher than India. China does rank high in food security, human health, and human resources.


Weishan, Yunnan.
Photo by Ted Eubanks

However, NIC's projections of resilience show China gaining capacity quickly and outranking Brazil, Turkey, Mexico and India by 2020. This is a reflection of the view that China is starting to turn its impressive entrepreneurial skills toward addressing the challenge of sustainability, of balancing economic, environmental and social goals while continuing on an economic growth path.

China's Tourism Sector

China is rich in potential tourism resources. The list would be never-ending if we attempted to catalogue all of the cultural, natural, political, ethnic, language, art, theater and other special-interest resources within its borders. The critical question is how China is managing these resources. Whether the national government's "command" approach to managing industrial

manufacturing sectors can be translated to developing, promoting and marketing personal, service-oriented tourism businesses which need to appeal to a widely varying set of audiences, both domestically and internationall, remains open to question.

After reading countless articles, papers, and industry reports from sources within China, Asia and elsewhere, the overwhelming impression is one of a "Field-of-Dreams" type of mentality: build it and they will come. While the domestic Chinese tourism market may be appeased by this approach, it seems that China has not yet developed the product development and marketing approach necessary to serve travelers looking for small-scale, unique and compelling experiences.

In the following pages, we explore the various aspects of China's tourism industry and how it affects the development of adventure travel.

WTTC's 2009 Travel and Tourism Impact report on China provides certain key data points for 2009:

- 9.8% of GDP (approximately US$ 449.3 billion);
- 7.8% of employment (3.8 million jobs);
- 0.6% T&T GDP growth; and
- 6.5% of exports.

Out of 181 countries, its T&T industry is ranked #3 in absolute size but #76 in relative size (that is, in terms of its contribution to the national economy) and #1 in terms of growth rate forecasts. Out of 7 countries in Northeast Asia, it is ranked #2 in absolute terms, #4 in relative terms and #1 in terms of projected growth rates.

China is ranked #47 (out of 133 countries) in the WEF's 2009 Travel and Tourism Competitiveness Index. Its best scores were in the areas of tourism infrastructure and ICT infrastructure. Some of its worst scores were found in cultural resources, availability of qualified labor, natural resources, human resources, price competitiveness of the T&T industry and prioritization of travel and tourism.

Managing Tourism

China is a managed economy, which is applied to the T&T industry as well as to the economy in general. For example, currently only inbound and domestic travel are open to foreign travel companies, while outbound travel, which is thought to be more profitable, remains closed to

foreign companies. Government restrictions on foreign companies in terms of domestic tourism have been, until this point, in favor of Chinese companies (though the government promised earlier this year to open up the outbound market and license foreign companies to sell outbound tourism packages). The UNWTO has called on the government to open up trade to international competitors in order to improve service standards in the Chinese tourism industry.

Other aspects of this structured approach to tourism should be noted. The country has a national "Golden Week" holiday system, originally implemented in 2000 as a number of paid one-week holidays to boost domestic tourism and increase internal consumption. In 2008, the government began shortening the Golden Week holiday system and created public holidays for more

traditional festivals and celebrations. In 2008, it shortened one of the golden week vacation periods, the May Day holiday, to three days; in 2009, the government has provided a wide range of incentive packages to support the two remaining Golden Weeks, the Spring Festival and National Day holidays. Local governments and tourism bureaus' efforts also included price cuts on tickets and travel packages in order to stimulate consumption during Golden Week stays.

In addition, the domestic tourism industry is built around designated "scenic spots" (mingsheng), which are steeped in Chinese traditional culture because they are based on a national canon of cultural places as described in the travel writings of Chinese literati and gazetteers. The way Chinese tourists experience these "scenic spots," however, is largely shaped by the state's interpretations and representations of Chinese culture. In fact, many of these spots are sites that were destroyed during the Cultural Revolution. On the whole, the government uses what is called the "spot business" (which also includes museums, zoos, and numerous theme parks) for patriotic education and the modernization of the nation.

Another interesting aspect of this "managed" approach is that the government promotes two major tourism products, one is called the "S-shaped" route, containing political and cultural sites such as Beijing, Xi'an, Shanghai, Suzhou and Hangzhou; the other one is "crescent-shaped," containing coastal open regions such as the Liaodong and Shandong peninsulas and the Yangtze and Pearl River deltas. While this certainly does not encapsulate all that China has to offer, it does highlight how the government emphasizes highly structured, planned tourism products. There has already been considerable discussion, at least among Chinese academics studying the hospitality industry, that international tourism in China is heavily concentrated in the coastal areas, further supporting areas where significant economic growth has already taken place.

Goals for Growth

The government announced in January its 2009 goals for the tourism industry: 1.65 billion tourists for domestic travel, 50 million for outbound travel, and 132 million tourists for inbound travel. In terms of the inbound market, the focus is to be on the source markets of Russia, Japan, South Korea, and other southeast Asian countries, and secondly, on long-distance markets such as Europe and the US. However, until August 2009 when it grew for the month by 3% year-over-year, the inbound market was down considerably, most particularly for the first six months of the year. The number of foreign tourists visiting China declined by 8% in the first six months compared to the same period last year, making it unlikely that it would achieve its goal of 132 million inbound visitors in 2009. The August increase, the first increase in more than a year, is thought to signal a stabilization in the market.

When it became clear earlier this year that inbound visitor goals would not be met, the national government provided a range of stimulus programs to encourage Chinese to engage in domestic travel, in large part to compensate for the major declines in international arrivals. As a result of various incentives and voucher programs, the government announced that up to one billion domestic trips were made during the first half of 2009, up 12% from the same period last year. (For example, Hangzhou gave out free, government-backed coupons worth a quarter of a billion yuan to increase domestic tourism.)

Profile of the Inbound Traveler to China

Visits to China from abroad declined by 1.4% between 2007 and 2008 (including those from Hong Kong, Macau and Taiwan), from 131.9 million in 2007 to 130 million in 2008. Excluding Macao, Hong Kong and Taiwan, foreign visitor arrivals of 24.3 million were down 6.8% from the previous year. The number of inbound travelers staying longer than one night dropped 3.1% to 53.1 million from 54.7 million.

The decline started during the second quarter of 2008, with a fall of 3%, increasing to a decline of 9.3% during the third quarter when the Olympics was taking place, and followed in the fourth quarter by a decline of 8%. Two of China's main source markets, South Korea and Japan, contracted noticeably in the second half of 2008. Beijing, the host city to the Olympics, received 389,000 international visitors in August 2008, well below what the Olympic organizers' target of 500,000.

China's tourism revenue totaled 1.16 trillion yuan (USD 169.5 billion) in 2008, up 5.8% from 2007, according to the National Tourism Administration. The revenue included 874.9 billion yuan earned from domestic travelers, up from 777.1 billion yuan in 2007, and 283.9 billion yuan ($40.8 billion)

from overseas tourists, down 2.6% from 312.9 billion yuan in 2007. However, on a positive note, travel expenditures per arriving, overnight visitors increased from $680 in 2007 to $770 in 2008.

Of the top 26 source countries contributing over 100,000 tourists to the total, the top two, Hong Kong and Macao, were essentially flat (Hong Kong up 0.5% to 78.4 million, representing 60.3% of the source market, and Macao down almost 1.0% to about 23 million, or 17.7% of the market); 20 were down, some significantly; and only four experienced growth between 2007 and 2008. The four that experienced growth in 2008 were Mongolia (up 3.4% to 705,270); Myanmar (up 58.9% to 508,995); Viet Nam (up 13.7% to 743,521); and Russia (up 4.0% to 3,123,415).

The US is the only source country in the top 10 from outside of Asia. In the #7 position, there were 1.8 million arrivals from the US in 2008, down 6.0% from 2007. Russia, at number 6, was the only source country to experience growth of the top ten countries. The remaining countries in the top 10, Taiwan, Korea, Japan, Malaysia, Singapore, and the Philippines, all experienced declines between 2007 and 2008 of between 2.0% on the low side (Malaysia) to a negative 13.4% by Japan and a negative 17.1% by Taiwan on the high side.

All European source countries in the top 26 declined between 2007 and 2008: UK by - 8.9%; Germany -5.0%; France -7.2%; Italy -9.7%; Netherlands -6.8%; Sweden -5.1%; and Spain -17.9%. Other decliners included Australia (-5.9%), Thailand (-9.4%), Canada (-5.6%), India (-5.6%), Kazakhstan (-32.0%), and Indonesia (-10.7%).

Many reasons have been given for the below-par performance: the aftermath of the Sichuan earthquakes in March 2008 when travel to the region was closed, the Tibetan riots followed by the Chinese police crackdowns, the interruptions of the Olympic Torch Relay that started the year, the decision to tighten up on issuing visas to international tourists in the run-up to the Olympics, and the increasing effect of the global economic crisis. There have also been increasing concerns by international travelers for the first time about food safety and hygiene, arising out of the tainted-milk scandal.

As a result, many people feel that the China National Tourism Administration ("CNTA") should have had a crisis-management plan for such events. Even if tourist arrivals slow down over the short term, most industry observers believe that China should be able to regain those visitors who put their plans on hold during the crises if handled professionally and quickly.

Profile of the Chinese Traveler

It would appear from the numbers that Chinese are avid travelers, both domestically and internationally. Once the industry started developing seriously in the 1990s, industry growth has been spectacular. Once the government opened up travel abroad as economic growth expanded dramatically and the Chinese consumer had the ability to spend, the outbound market has taken off. We offer a snapshot of the Chinese traveler both domestically and internationally since we believe it will provide some insight into what Chinese tourists look for when they travel.

As is evident from our analysis, outbound travel from China is dominated by the two destinations of Hong Kong and Macao, both of which are really domestic as Chinese Special Administrative Regions ("SARs"). In 2008, there were 9.4 million departing tourists to Hong Kong and 3.1 million to Macao.Hong Kong and Macao clearly have special relationships with China, and travel

between the countries is likely motivated by many reasons, including business and visiting family and friends. There are 22 countries that are destinations for at least 100,000 Chinese tourists. The next five destinations on the list – Korea (1.2 million visitors), Singapore (1.1 million), Japan (1.0 million), Malaysia (944,000) and Russia (over 815,000) – are close neighbors, and are also likely to have a web of motivating factors for visits.

The U.S. at #10 is the first western country on the list after the above two SARs and five countries and has been a growing contributor over the previous five years. In fact, the number of departing Chinese tourists grew by 24.0% between 2007 and 2008 to almost 493,000. What is particularly noteworthy in our estimation is that the numbers of departing tourists to certain destination markets outside of China's immediate neighbors declined between 2007 and 2008: UK down 24.8%; Switzerland down 11.5%; Italy down 1.2%; New Zealand down 7.0%; Australia down 0.3%; France down 7.5%; and Germany down 8.8%.

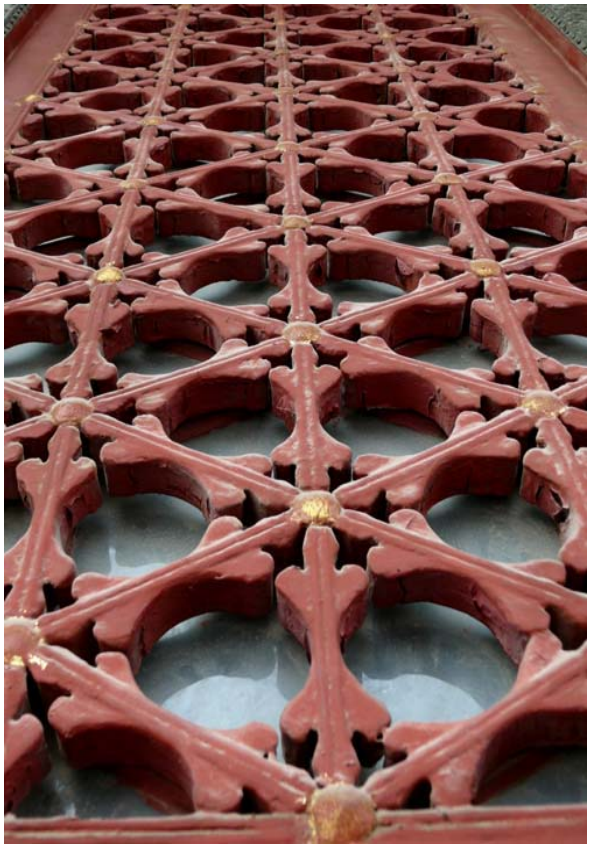
UNWTO data estimates that travel expenditures by Chinese tourists in other countries increased from $727 per departing tourist in 2007 to $789 in 2008.

The government estimates there were 1.7 billion domestic tourists in 2008, increasing about 6% over 2007. Domestic tourism accounts for about three-fourths of total T&T revenue. For the first six months of 2009, there were already 1 billion domestic trips taken, a 12% increase from the first six months of last year. It is not yet clear exactly how much money was actually made since there were a number of incentive and deep-discount programs implemented to encourage Chinese to travel during national holiday weeks and to spend money. However, it does serve to emphasize that travel is an important part of the Chinese leisure lifestyle.

Increasingly, well-off Chinese are opting to travel within China for fun and relaxation. While this is driving the growth of the thousands of four- and five-star hotels filling China's cities, there is also a much larger boom happening in economy lodging, which has seen phenomenal growth in revenues, some 80% in recent years. Since opening its first hotel in Beijing in 2004, for example, Wyndham Worldwide's Super 8 franchise had grown to 67 properties on the mainland by 2008. Wyndham also benefited from its presence during the Olympics, and was the only economy hotel chain to become a member of the Olympic Village Accommodation Service Management team, contributing a couple of hundred employees to manage 14 apartment buildings and resident service centers in the Olympic Village.

There has also been a surge of unique boutique hotels opening around China in the last few years by independent owners and entrepreneurs as well as by some of the top-tier hospitality

brands that have plans to develop and bring to market separate boutique brands (for example, Hotel Indigo by InterContinental Hotels Group). IHG believes that Asian consumers are evolving very quickly and that the market will be comparable to the US and Europe in relatively short order. China Market Research Group believes that Chinese consumers between 24 and 32 years old plan to travel at least once every six months and will seek to stay at unique brands such as offered by the boutique hotels.



An interesting effect of this large-scale domestic tourism market is on the foreign traveler's experience in China. For the first time, mainland Chinese tourists are in the same hotels and on the same cruise ships as foreign visitors, most particularly U.S. tourists. Many Chinese tourists speak English, so now there is a great deal more interaction between Chinese and U.S. tourists during their shared experiences. Although cultural differences over such things as etiquette and smoking may cause friction, the interactions greatly enrich the experiences of both and set the stage for a broader array of tourism experiences for both tourists in the future.

The majority of Chinese travelers are still price-conscious, and competitive pricing is a feature of most of the packaged market: package differentiation is generally based on price rather than on package inclusions. However, some consumers in more developed travel regions of China are becoming more sophisticated and seeking quality and varied travel options, so it is projected that FIT travel will quickly become more popular.

On the outbound side, increasingly favorable and flexible government policies have opened up the Chinese tourism industry to the world and enabled Chinese tourist groups to travel to 93 destinations at the present time. This has led to broader and keener competition amongst potential destination countries. Chinese consumers are required to book through a licensed agent

for Approved Destination Status ("ADS") leisure travel. Agents are the key to the ADS visa issuance process. Government delegations and technical visits, company incentive trips, study groups and FIT/experience seekers are not required to book through an ADS-licensed agent.

In a recent survey, PATA, in conjunction with Monitor Group, found that the profile of the outbound Chinese traveler is gradually shifting from middle-aged businessmen to young, career-driven professionals that travel to enjoy their new-found social and economic freedom. The younger generation is confident, ambitious and internationally aware.

The results of the survey further indicate that, while Chinese spend less than those from many other countries when traveling largely because they budget considerably less for accommodations, they spend up to 80% more than the Japanese when it comes to shopping. Three quarters of Chinese travelers are buying luxury goods overseas because they are less expensive than at home, and nearly six in 10 do so because they can be sure the luxury good is genuine and authentic.

ITB World TravelTrends Report 2009 observes that young consumers across Asia, not just in China, are becoming an increasingly powerful market for travel. Fifteen years ago, an overseas trip was considered a rare treat; now personal travel is seen as a key activity in their lifestyles. For young consumers, in terms of spending priorities, travel is not something they want to put off.

In March 2009, China Polling conducted a nationwide, online International Travel Survey to understand what Chinese consumer travel plans were for 2009. Despite the economic recession, consumers overall had a high level of interest in and willingness to travel abroad, with an emphasis on higher-priced personalized travel products. While economy tour packages have been a given in the Chinese tourist landscape, there seems to be rapidly emerging an interest in exciting, personalized, "theme" travel. The top six categories of "theme" travel were: adventure travel (42.62%); food and drink tours (19.05%); spa and relaxation tours (12.70%); shopping tours (8.73%); business

development tours (5.56%); religious/pilgrimage tours (4.76%); and other (1.59%).

In December 2008, WTM-ChinaContact hosted a forum titled, “China – The Future of Travel.” Participants in the forum made the point that Chinese travelers, most particularly at the upper end of the market, have developed beyond “the hurried, first-time visits and are not looking for more sophisticated offers. They are willing and able to spend more if they get high-quality services – quality according to the specific Chinese customs, values and demands.” The last point is critical: for marketers seeking to attract Chinese tourists to their destinations, it is not simply a matter of

providing the same set of services and experiences that may have been provided to western counterparts. Marketers must take the time to understand the particular cultural attitudes and values to provide the best experience available.

The H1Ni swine flu epidemic severely curtailed China’s outbound travel industry since April 2009. With the restrictions imposed on travel by the government as a result of the pandemic, travel executives around the country are now saying that pent-up demand for international travel is growing. A survey of 100 travel industry executives by Shanghai-based travel consultancy Asia Tourism Relations in July of this found that 87% of the respondents stated that H1N1 had completely devastated their businesses, with outbound travel numbers collapsing by over 90% in the second quarter of 2009 in comparison to the same period last year. In contrast, for the first quarter, 79% reported solid growth of more than 15% over the same period in 2008. Popular destinations most affected by the travel restrictions were the Americas, Australia, and Japan.

UNWTO data emphasize that east Asian and southeast Asian travel destinations still dominate, though Hong Kong and Macao account for only 29.1% of total outbound traffic compared with 76.7% as generators of inbound traffic. The top 8 destinations after Hong Kong and Macao are, in descending order of importance, Singapore, Korea, Thailand, Japan, Russia, and Malaysia, accounting for an additional 13.6% of outbound traffic. France at #9 position accounts for 1.6%, Germany at #11 1.1% and the U.S. #12 1.0% of total, the only western destinations in the top 15 destinations. The remaining top 15 outbound markets are Vietnam, Australia, Indonesia and Mongolia.

There is more diversity in emerging destination countries, which include Italy, Canada, the U.K., Switzerland, New Zealand, India and Egypt.

Climate Change, Water Resources, and Sustainable Tourism and Adventure Travel in China

It may be particularly difficult for the Chinese government to develop, implement and support sustainable, adventure-tourism products across the country given its current centralized approach. For innovative adventure tourism products to develop, our experience indicates that an approach which integrates all stakeholders at multiple levels of the tourism value chain is required for projects to be successful. China certainly has an immense number of potential adventure-tourism sites on which to focus throughout the whole country, most of which are known only to domestic tourists and some intrepid backpackers from around the world.

We believe that it is important that the tourism industry in China broaden its approach to include a wider range of regions and communities geographically in order to spread the economic "multiplier effect" which we all know happens with the development of tourism. In addition, it will take some of the pressure off of the major historical, cultural, and heritage sites upon which the tourism industry depends and help maintain their integrity and authenticity.

Eco-tourism is not well-developed in China compared with other countries in southeast Asia and South America, for example. There is no set of guidelines or policies generally accepted with which eco-tourist destinations can be rated and validated. With a country as large and diverse as China, however, this will require the involvement of stakeholders at many levels, not just the national government – regional and local governments, NGOs as well as a variety of private companies with a vested interest in ensuring that sustainability policies are maintained. There does exist a variety of small, adventure-travel companies emerging in China, specializing in a wide variety of special-interest itineraries across the breadth of the country. However, we believe that these companies such as WestChina Tours and WildChina, even when combined, do not yet have the critical mass, financial wherewithal or credibility to force the adoption of policies consistently applied across the country.

At the present time, most China tourism observers feel that ecotourism is still best characterized as embryonic. The Meridian Group, a consultancy and research firm in southwest China states: "Both in Yunnan, where many ecotourism projects are based, and across China as a whole, nature-based tourism is often marketed as being environmentally friendly, but in practice, places little emphasis on conversation and environmental or social awareness."

A 2007 case study comparing the ecotourism approaches taken by the states of Guizhou and Yunnan[1] supports this. Each state took a different approach to nature tourism development and drew very different results.

- In Yunnan the government invested in large-scale roads, restaurants, hotels and restrooms and focused on destinations that already had some level of notoriety;

- In Guizhou, the focus was on ethnic villages. Guizhou became the first state in China to specifically tie tourism with poverty reduction goals – instead of large hotels, in Guizhou they expanded the existing style of local housing and encouraged handcraft outlets to purchase directly from local people; they had local roads smoothed, but no major new highways were constructed.

Results:

- In Yunnan tourism volumes grew rapidly in the 1990s from 210, 000 in 1991 to more than 2.1 million in 2001;

- In contrast, tourism volumes in Guizhou grew from 34,000 in 1990 to only 300,000 by 2001; and

- Guizhou's net rural income increased 337% between 1993 and 2002. In contrast, in Yunnan, GDP rose significantly but net rural incomes remained flat.

Thus, Guizhou's brand of tourism has been praised for reducing poverty significantly, although in terms of GDP, it cannot be said to have contributed much to economic growth. Compare Guizhou with what we see in Yunnan – high economic growth, but ultimately with a low impact on rural poverty and very likely negative impacts on the quality and sustainability of the environment.

Government support is not entirely absent, however. Since the early 1980s, the national government has been involved in establishing World Heritage Sites, and, today, the country has 27 cultural, 7 natural and 4 mixed cultural/natural sites, with 56 submitted for consideration. As of 2007, the country had more than 2,300 natural reserves. However, at the present time, it has no established norms and uses no international certification systems such as Green Globe

[1] Donaldson, John, "Tourism Development and Poverty Reduction in Guizhou and Yunnan." The China Quarterly, 190, June 2007, p 333 – 351.

consistently. As of 2006, only two hotels, two parks and one museum in China had been Green Globe-certified (Chinese Perspective on Tourism Eco-certification, Chinese Academy of Sciences).

While China posts impressive tourism numbers, maximizing tourism potential is not just about increasing numbers but about supporting environmental, cultural, economic, climate and water-resource sustainability. Furthermore, China cannot become the world's richest tourist market simply by having the largest number of domestic tourists. Strategic dominance requires that it increase the Western component of tourism because of the sheer scale of average per-capita tourism expenditures by North American and European travelers when compared to most other travelers in the world. The country needs a much larger share of this market in order to produce optimal revenues and profits and to support the development of sustainable tourism and adventure travel products.

In addition, the fact that domestic tourists make up the bulk of China's travelers may pose a problem, at least over the short term, for the ecotourism sector. While attitudes are slowly changing, Chinese travelers are not yet demanding green travel options. Much of the country's tourism infrastructure is also geared toward the predominantly domestic mass market, the kind of tourism characterized by busloads of tourists arriving in droves at the same spots. This approach is supported by national policies to encourage people to travel during the same time at Golden Weeks and to travel to certain designated spots. Press releases continually tout that China has the largest number of domestic tourists in the world; at the Spring Festival this year, press releases emphasized that 109 million domestic tourists participated!

Albert Ng, CEO of WildChina states: "They (the Chinese) want to see it, photograph it and leave. They're not looking for an experience." He estimates that, at present, ecotourism accounts for less than 5% of the overall market. Because of this domestic-accented nature of travel in China, adventure travel will inevitably be different from other "green" destinations in Asia in particular where the majority of tourists are foreign. Ng says that he expects that there will be an ecotourism segment in China but with a definite Chinese personality, though he is not sure what form it will take.

Ng makes the point that, while China has a growing number of tourism projects purporting to be green, ecotourism's popularity will ultimately depend on the present and future generation of Chinese travelers. He believes that the evolution of environmental awareness will largely come from the younger generations, which he believes is already happening as young Chinese become educated about global warming, travel abroad and encounter other forms of tourism. He cautions,

however, that it may not happen for awhile as these young travelers make up a small fraction of China's overall traveling public: "China will take another generation before the market differentiates into different segments."

The sheer size and scope of the issues China is facing relative to tourism, climate change and water scarcity require it to think through how to put into effect the balance required between tourism and conservation goals. We believe China has the opportunity to take a global leadership role in unleashing its significant entrepreneurial and business skill sets, as well as its cultural sensibilities, to pave the way for making this balance work on a large scale. In the meantime, the balancing act will be difficult, and the challenges extreme as the country could potentially lose many of its precious cultural and natural resources and ancient sites to neglect, overuse, and other unsustainable factors.

Photo by Ted Eubanks

Mexico

Overview

Mexico, with an area of 1,958,200 km², is the world's 15th largest independent nation and represents 9.2% of the region's total land area, the fifth-largest country in the Americas. It is a federal constitutional republic comprising 31 states and a Federal District, the capital city of Mexico City. It is a pivotal contributor to prosperity and stability in the Western Hemisphere, and in spite of persistent poverty, most particularly among the nation's largely Amerindians in the impoverished, rural southern states, the country produces more than $12 trillion worth of goods and services, one of the key economies in Latin America and the Caribbean. It is firmly established as upper middle-income and is considered a newly industrialized country, with the 11th largest economy in the world by GDP measured by purchasing power parity. However, continued economic growth and resulting environmental degradation present significant challenges to the country's rich biodiversity.

Current environmental issues include the scarcity of hazardous-waste disposal facilities; rural and urban migration; natural fresh water scarce and polluted in the north, inaccessible and poor quality in the center and extreme southeast; raw sewage and industrial effluents polluting rivers in urban areas; deforestation; widespread soil erosion; desertification; deteriorating agricultural lands; serious air and water pollution in Mexico City and urban centers along the U.S.-Mexico border; and land subsistence in the Valley of Mexico caused by groundwater depletion. The government considers the lack of clean water and deforestation national security issues.

Organic growing project in Oaxaca

Mexico was the site of advanced Amerindian civilizations when it came under Spanish rule for three centuries before achieving independence early in the 19th century. Complex cultures began to form in the Pre-Columbian era, and many matured into advanced civilizations such as the Olmec, the Toltec, the Teotihuacan, the Maya and the Aztec before the first contact with Europeans. Mexico became a colony of Spain from the landing of Spain in 1521 until its independence in 1821. The post-independence period was characterized by economic instability, territorial secession and civil war, including foreign intervention, two empires and two long domestic dictatorships, culminating with the Revolution in 1910, the promulgation of the 1917 Constitution, and the emergence of the country's current political system.

The elections in 2000 marked the first time since the 1910 Revolution that an opposition candidate from the National Action Party ("PAN") defeated the party in government, followed by the election of another PAN candidate in 2006, the current President of Mexico, Felipe Calderón. In January 2009, Mexico assumed a non-permanent seat on the UN Security Council for the 2009

– 2010 term. It is also the only Latin American member of the Organization for Economic Cooperation and Development ("OECD") since 1994.

Climate and Natural Features

Mexico is located in what is referred as the Inter-tropical Convergence Zone with climate ranging from tropical to arid desert. It has high, rugged mountains and volcanoes, low coastal plains, high plateaus and desert. It is crossed from north to south by two mountain ranges. From east to west at the center, the country is crossed by the Trans-Mexican Volcanic Belt. The fourth range runs from Michoacán to Oaxaca. Thus, the majority of the Mexican central and northern territories are located at high altitudes, with the highest elevations in the Trans-Mexican Volcanic Belt. The Tropic of Cancer effectively divides the country into temperate and tropical zones, with lands north of it experiencing cooler temperatures during the winter months and south of it fairly constant temperatures year-round, varying solely as a function of elevation. This gives Mexico one of the world's most diverse weather systems in the world.

Approximately 12.7% of the land is arable, with only 1.3% in permanent crops. Of the total arable land, 25.3% is irrigated. The country has 457.2 cubic km of total renewal water resources (2000, WRI) and total fresh water withdrawals per capita of 731 cu m/year (2000).

The altitude and maritime influence generate penetrating masses of humid air deriving from both the Gulf of Mexico and the Pacific Ocean. These two factors moderate the country's temperatures. Precipitation is scarce in the north of the country but more abundant in the

southeast and in the valleys of the Gulf of Mexico and of the Pacific south of the Tropic of Cancer. Precipitation occurs mainly from June to October. The country also experiences extreme meteorological phenomena, such as tropical cyclones and tsunamis along the Pacific coast, volcanoes and destruction earthquakes in the center and south, and hurricanes on the Pacific, Gulf of Mexico and Caribbean coasts.

Mexico is one of the world's five most biodiverse countries in the world. With over 200,000 species, Mexico is home of 10-12% of the world's biodiversity (CONEVYT). Mexico ranks first in biodiversity in reptiles, with 707 known species; second in mammals, with 438 species; fourth in amphibians, with 290 species; and fourth in flora, with 26,000 different species. Mexico is also considered the second country in the world in ecosystems and fourth in overall species.

In the Sierra Norte, Oaxaca

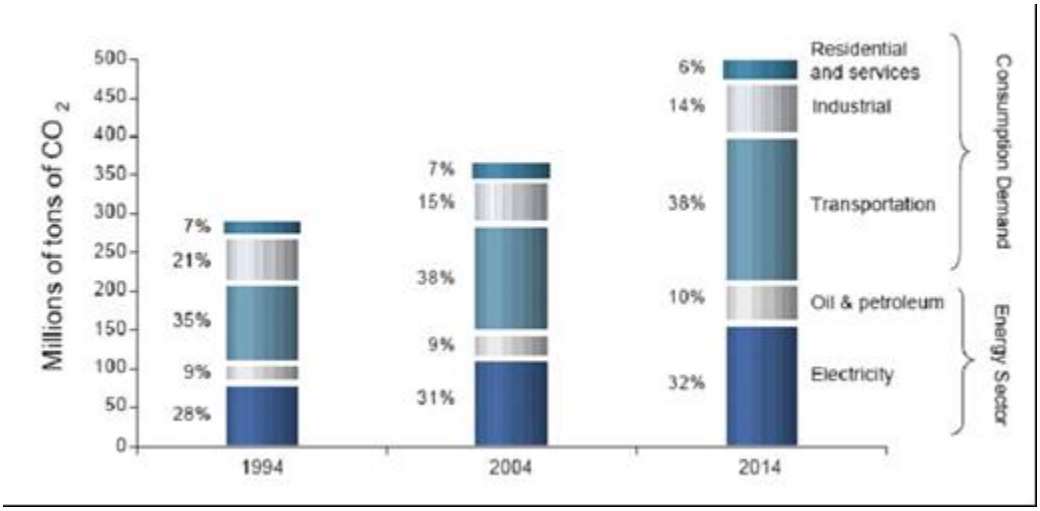
About one-third of Mexico's land area is covered by biodiversity-rich native forests, two-thirds of which is considered to have commercial potential. Although 5,925,000 hectares (hectare = 10,000 square meters or 107,637 square feet) disappeared between 1990 and 2005, deforestation rates of primary forest have decreased 15.3% since the close of the 1990s.

Recent estimates (ECOSUR and CONAFOR, 2008) for deforestation change between 2003 and 2006 are about 350,000 hectares/year, down from 512,500 hectares/year between 1993 and 2002. (This figure does not include the additional 457,000 hectares/year lost to forest degradation.) The primary drivers of deforestation and forest degradation include land-use change, illegal logging, forest fires and pests, authorized land-use changes, and other events such as hurricanes and other natural disasters. Climate change has a more indirect, but still significant, impact on these trends, and in some cases, can accelerate them.

Mexico's Vulnerability to Climate Change

According to Mexico's the Institute Nacional de Ecologia, the country emitted in 2006 715 million tons of carbon dioxide equivalent (Mt CO2e, of which 430 Mt CO2e resulted from emissions from the energy sector, over 60% of which related to the combustion of fossil fuels).

The sectors responsible for Mexico's GHG emissions are found below (CMM 2006):



Mexico has a specific carbon emissions issue common to oil-producing countries, which is a process called "gas-flaring." This is when massive amounts of natural gas are flared off into the environment in a bid to keep aging oil fields in production. It is estimated that, in total, gas-flaring has a global impact on climate change by adding about 400 million tons of CO2 annually. Apparently Mexico allowed CO2 emissions from its oil industry to soar in 2008. The World Bank has an initiative underway to begin to control this problem called the Global Gas Flaring

Reduction Partnership. Unfortunately, Mexico and Russia (the biggest emitter in the world by far) have not joined the partnership.

The country currently has low emissions per capita but increasing emissions overall, with high emission growth rates projected for 2010. It has a strong dependence on oil.

In terms of water resources, they are under stress in many parts of the country, especially in the arid northwest and central regions where most of the population lives and most of the economic activities are located, including tourism. The country originally put in place decades ago a system of water resources management that includes both federal and decentralized (basin-level and local) institutions. Despite many achievements over the years, Mexico is still facing major

challenges including the following: increasing water scarcity, over-exploitation of freshwater resources, especially groundwater; deteriorating water quality; lack of financial sustainability in the water sector; need to modernize water-supply and sanitation services; improvement in the competitiveness and efficiency of irrigation; the strengthening of water institutions; and the adaptation to climate-change impacts, especially droughts and floods.

Mezcal producer; Oaxaca.

Total internal renewable water resources are 457 billion cubic meters ("BCM")/year, plus 49 BCM/year inflows from neighboring countries. Water is abundant in the relatively sparsely populated south and scarce in the more densely populated center and northern sections of the country. The center and north where 77% of Mexico's population lives and 85% of its GDP is generated have only 32% of the country's renewable water resources. Rainfall is highly variable and droughts frequent. The states more affected by drought are Chihuahua, Mexico and Zacatecas.

Total water withdrawals for consumptive use are 78 BCM/year. The largest consumptive water user is agriculture (78%), followed by domestic use (17%) and industry (5%). Overall, only 18% of water resources in Mexico are withdrawn for consumption use. However, there is water stress in several regions of the country. The highest pressure on water resources is encountered around Mexico City (120% of resources); in Baja California (86% of resources; and in Sonora in the northeast (79% of resources). Conagua, the National Water Commission, has stated that 104 out of 653 aquifers are categorized as overexploited in 2005. Total groundwater use was 27.5 BCM/year, while recharge is estimated at 77 BCM/year. Out of the country's 13 administrative hydrological regions, in 4 regions abstraction exceeds recharge: Baja California, the Northeast, the North Center and the Mexico Valley.

The most important effects of climate change in Mexico include the following: growing desertification in the central and northern portions of the country; reduction of agricultural potential; water-supply scarcity, most particularly in the central and northern regions; flooding in coastal areas; increase in extreme hydro-meteorological events; forest degradation and likely increase in fires; negative impacts on biodiversity; and negative impacts on human health.

WMO predicts that it is highly likely that the mean temperature in Mexico will increase by 2 to 4º C by 2080, mainly in the northern part of Mexico. In the winter, it is very likely that precipitation will decrease by 15% in the central part of the country and by 5% in the region around the Gulf of Mexico. In the summer, it is projected that precipitation may decrease by 5% in the central part of Mexico. It is also predicted that there will be delays in the onset of the rain season, with the season likely to extend to the autumn in many parts of the country. In northern areas and regions with large populations, especially in central Mexico, erosion and drought severity will increase with higher temperatures and rainfall variations in these arid and semi-arid regions. Additionally, researchers are concerned that tensions between the US and Mexico over shared water resources from the Rio Grande/Rio Bravo River could increase as climate change increases water scarcity in both countries.

Early in September 2009, a series of press releases serve to emphasize the emerging severity of Mexico's water crisis. There has been a months-long drought, which is affecting broad swathes of the country. The sparse rainfall nationwide has made 2009 the driest in 69 years of government record-keeping. Mexico City is rationing water and even threatening to cut it off for periods of time; crop fields are parched; and many reservoirs are low. This is typically Mexico's wet season but rainfall has been sporadic and unusually light. In addition, its hurricane season has been very mild. The government estimates that Mexican growers have had so far more than $1 billion of losses from crops planted during the spring in anticipation of season rains.

Mexico's Climate-Change and Water-Infrastructure Policies

Mexico significantly boosted its image as a global leader in climate change in December 2008 when it announced that it had set the goal of reducing by 2050 greenhouse gas emissions to 50% below 2002 levels. The other BRICMs have been largely unwilling to agree to cut emissions, so this move has given Mexico a higher profile which may increase its capacity for political dialogue internationally. The country is now embarking on a comprehensive strategy to cut emissions and reduce energy use while also putting the Mexican economy on a low-carbon growth path. With its heavily polluting oil industry, heavy use of road transportation, and 110 million people predominantly living in urban areas, Mexico accounts for about 1.5% of global emissions. While a

small global contributor when compared to China or India, it is still enough to make Mexico a leading player in the rest of the developing world.

Mexico's President, Felipe Calderón, believes that Mexico is an ideal bridge between rich and poor nations "immersed in bitter arguments over emissions targets in industrialized countries and financing for adaptation measures and green technology in the developing world." To this end, he is vigorously promoting a financing mechanism called the World Climate Change Fund (or Green Fund), which he claims will shift the paradigm away from "mutual reproach" to "shared responsibility."

The Mexican government feels strongly that there is a growing gap between the funds that are needed to mitigate and adapt to climate change globally and what is available, which are generally small-scale funds with limited time horizons. Donor-recipient models lack "collective ownership" of the problem and are difficult to scale up. In addition, today, there are inadequate governance schemes with little participation of developing countries. Finally, supported activities today are of reduced or narrow scope; in developing countries, they are generally isolated projects and not broad-based sector programs.

Boats near Yaxchilan in Chiapas.

The objectives of the fund are to expand the scale of global mitigation efforts and enable the participation of all countries; to support adaptation activities; to promote technology transfer and diffusion; and to underpin financially the new climate-change regime. In principle, all countries should contribute to the Fund in accordance with the principle of common but differentiated responsibilities. The key is to give all countries incentives to comply with UNFCCC obligations. Contributions shall be agreed multilaterally and could be determined by indicators such as current and on-going levels of greenhouse gas emissions, environmental equity, carbon intensity, capacity to pay, size of population, and level of GDP. Total contribution by country will equal the weighted sum of the agreed-upon indicators.

Mitigation activities supported should yield real, measurable, reportable and verifiable mitigation results. Examples of possible eligible activities include reforestation, reduction of emissions from deforestation and forest degradation, reduction of emissions by management of agricultural soils, sustainable production of biofuels, increased energy efficiency, large-scale promotion of renewable energy, green buildings and low emission vehicles. Eligible activities could range from the project level to the program, sub-sector, complete sector, or sub-national entity scale.

Mexican officials say that Calderón's enthusiasm for leading the way on climate change is motivated by pure utilitarian math: Mexico is both one of the countries most vulnerable to global

warming and one rich in potential renewable energy resources. It has been hit several times during his term by extreme weather events: in 2007, a devastating flood put 80% of the southern state of Tabasco under water, costing some $5 billion in damage, while farming in the north has been severely hurt by a prolonged drought.

The country's recently announced Special Program on Climate Change Program ("PECC") 2008 – 2012 has several key goals:

- Mitigation goal of 50 MtCO2e, about 8% of emissions, by 2012 mainly in land use, land-use change and forestry ("LULUCF"), energy generation, energy use, solid waste and waste water;

- For the period 2008 – 2012, twelve groups of measures established for 55% of GHG potential reductions;

- Development of a carbon trading market;

- Reduction of greenhouse gas emissions by 50% below 2002 levels by the year 2050.

By using existing and near-commercial technologies, the Mexican government believes that it has the potential to peak GHG emissions by 2015 and to reduce them by 25% versus 2005 levels by 2030, which would be 65% below the point emissions would reach without any action.

The PECC is considered part of the 2007–2012 National Development Plan ("NDP"), and in particular, part of the environmental sustainability pillar of the NDP. The PECC establishes a low-carbon development scenario for Mexico, identifying priorities and financing sources, both domestic and international.

Mexico's plan got a $500 million boost in June when a new Clean Technology Fund ("CTF"), supported by eight governments and managed and administered by the World Bank, committed to back it. Mexico is among the first countries to tap the $5.2 billion fund that provides grants and low-interest financing to pilot and scale up low-carbon technologies and make other changes that reduce energy use and pollution. Mexico's focus will be on cleaner urban transportation (e.g., deployment of low-carbon bus rapid-transit systems and light rail in key urban areas), energy efficiency and renewable energy, especially wind power and mini-hydro installations.

Mexico has great potential to produce renewable energy. Approximately 24% of its electricity now comes from hydro dams; while only 7% comes from the wind sector today, Iberdrola, a Spanish utility, is building a giant wind farm at La Ventosa ("the windy place"), an area in the southern state of Oaxaca which features gusts of winds strong enough to topple trucks. This will provide power to 200,000 people and avoid the emission of 150,000 tons of carbon dioxide per year. Another initiative is the La Venta III Project supported by the World Bank through a $50 million grant from the Global Environmental Facility. The wind projects currently under development will provide 500 megawatts of capacity. Small hydropower projects expected to be funded through the CTF are expected to provide 325 megawatts of capacity. The government is also in talks with Q-Cells, a German company, to build a factory to manufacture solar panels in an investment that could total $3.5 billion over five years. Mr. Calderón is also seeking American investment in solar power in northern Mexico.

In mid-September 2009, IDB announced that it will provide a $400 million programmatic policy-based loan ("PBL") to help Mexico implement its ambitious climate change program. The PBL is a flexible, fast-disbursing financing instrument that will allow Mexico to implement quickly specific activities under the National Climate Change Strategy. This is the second PBL approved by the IDB, the first one being for $200 million in November 2008 to undertake a study on the economic

impact of climate change on Mexico. The study, completed earlier this year, provided the first compelling evidence that the costs of mitigation and adaptation to climate change could be considerably lower than the cost of doing nothing.

The new PBL will establish a series of financial mechanisms to jump-start investments in renewable energy and energy efficiency. These will include an Energy Transition Fund that was established under Mexico's recently adopted renewable energy law; expansion of participation in carbon trading markets; and new programs to finance green-energy through Mexico's national development banks (e.g., NAFIN). Earlier this year, Mexico became the first country to submit an investment plan under the Climate Investment Fund or CIF, a joint program by the multilateral development banks. Specifically, Mexico requested CIF funding for an energy-efficiency program focused on housing and for wind power projects that are expected to be approved in 2010.

Mexico's Tourism Sector

Photo by Jessica Reilly

In 2007, it became clear that the travel and tourism industry and its development were going to be a clear priority for the Calderón government, reflected in a variety of financial activities in his first Presidential year. In 2007, the Mexico Tourism Board allocated Mx$1.8 billion for the development and promotion of tourism in the country. The main focus of the marketing activity was to promote Mexico's image as a tourist destination of excellence.

The Consejo de Promoción Turstica de México participated in numerous international tourism fairs in Asia and Europe, attended 556 promotional events and released various publicity campaigns.

Also in 2007, the national government allocated Mx$297 million to 256 projects regarding infrastructure and services, urban image and equipment in key tourist destinations. This budget represented a 178% increase over the 2006 figure. In addition, Fondo Nacional de Fomento al Turismo (FONATUR) enforced its maintenance and consolidation activities for the tourism infrastructure of the five Integrally Planned Centers: Cancun, Ixtapa, Huatulco, Los Cabos and

Loreto. These amounted to a total investment of Mx$156 million, which was a 66% increase over the 2006 figure.

The government, along with private partners, spent US$1 million to promote the archaeological zone of Chichén Itzá as a contender for one of the new Seven Wonders, which it earned in July 2007. The national government hopes that this designation will double the number of visitors in the near future.

Over the last five years, there has been massive growth in the hotel/resort spa industry, with a rapid rise in the numbers. However, increased concerns about the lack of official sanitary and quality regulations has slowed growth, with the Health Ministry and the Latin American Spa Association setting up norms to regulate the personnel and establishment conditions.

The 2009 federal budget, approved by the Mexican Congress in November 2008, earmarked MCN 4 billion for the tourism sector in 2009, nearly 1 billion more than originally requested by President Calderón, with nearly 40% directed towards new development projects, such as a planned MXN 122 million resort on the Pacific near Mazatlan. Such an increase in spending reflects the importance placed by the government on the tourism industry, one of the most important to the Mexican economy.

In April 2009, Mexican tourism was hit hard when H1N1 influenza (Swine Flu) was detected in Mexico, compounding the effects of the recession that was already having a negative effect on tourist arrivals. This resulted in travel alerts issued by the US and other countries. The government responded quickly and in a coordinated manner to the crisis, impressing many people in the international health community. However, various reports observed that retail and tourism businesses were likely to bear the brunt of the economic losses generated by the H1N1 crisis.

Puerto Escondido in Oaxaca; Photo by Jessica Reilly

As an example, during the first two weeks of the H1N1 swine flu scare, after the Centers for Disease Control and Prevention had issued an advisory against travel to Mexico, 123 cruise ship

calls to Mexican ports were canceled in Mexico, with costs estimated to be $23.2 million. The financial loss of not having those passengers and crew Multiple that number across all of the many tourism activities and destinations by the extended period of time that the country suffered through the scare well into the June/July timeframe, and you will get a measure of how much was lost by the economy.

In the summer, Mexico stepped up various promotion efforts, most particularly in the US, to boost US arrivals for the coming fall and winter travel season. The country's "Welcome Back" campaign was launched in New York in June 2009 aimed at travelers from the US and Canada, many of whom might still be wary of booking Mexico holidays because of bad press regarding drug violence and the Swine Flu. The effort focused on 12 major markets in the US and six in Canada, which in total account for almost 85% of Mexico's international arrivals.

The Mexican Tourism Board also launched a national campaign aimed only at Mexicans. The goal of the campaign, called *Vive Mexico*, is to enlist Mexicans in revitalizing the tourism industry and counteracting the negative publicity from the epidemic. The Mexico Tourism Board announced in August that both international and domestic bookings were approaching normal levels for this time of year.

Oaxaca City Market
(Photo by Jessica Reilly)

The importance of the tourism industry to the Mexican economy is reflected in WTTC's 2009 Travel and Tourism Impact report on Mexico. Of all of the BRICMs, it has the largest tourism industry as a % of GDP, as a % of exports, and as a % of employment.

The report provides the following key data points for 2009:

- 13.3% of GDP (approximately US$ 276.9 billion);
- 12.9% of employment (3.8 million jobs);
- 0.0% T&T GDP growth; and
- 13.4% of exports.

Out of 181 countries, its T&T industry is ranked #9 in absolute size but #49 in relative size (that is, in terms of its contribution to the national economy) and #76 in terms of growth rate forecasts. Out of 3 countries in North America, it is ranked #2 in absolute terms, #1 in relative terms and #1 in terms of projected growth rates.

Mexico is ranked # 51 (out of 133 countries) in WEF's 2009 Travel and Tourism Competitiveness Index. Its best scores were in the areas of ground transportation infrastructure and ICT infrastructure. Some of its worst scores were found in cultural resources, availability of qualified labor, human resources, and prioritization of travel and tourism.

In the *Adventure Tourism Development Index* (www.adventureindex.travel) Mexico ranks #33 in Developing Country Rankings (out of 164 countries).

The most notable tourist attractions today are the beach resorts, the ancient Meso-American ruins and colonial cities. The nation's temperate climate and unique culture – a fusion of the European, particularly Spanish, and the Meso-American – make it an interesting destination. There is also a fast-developing domestic tourism trade as a growing, affluent middle class begins to travel within its own country, with up to 20% of Mexicans now vacationing domestically.

So far, Mexico has clearly focused on the development of large-scale tourism, much of it focused on the coasts and beaches both on the Atlantic and the Pacific. Except for isolated instances, there is little activity and/or publicity around the development of sustainable tourism products, most particularly adventure-tourism products. Given the current government emphasis on the development of a low-carbon future, the importance of the tourism industry to the Mexican economy and the national government's emphasis on the adoption of sectoral-oriented climate-change mitigation and adaptation strategies, it would seem logical that, at some point, national tourism plans would incorporate plans that place more emphasis on sustainable tourism products and services centered on adventure travel.

Profile of the Inbound Traveler to Mexico

Arriving tourists staying overnight in Mexico grew 5.9% to 22.64 million in 2008. Travel expenditures also grew, albeit at a slower rate of 3.4%. As a result, expenditures per arriving tourist dipped from $601 in 2007 to $587 in 2008.

In 2008, the U.S. accounted for 18,034,158 million arriving tourists, almost 80% of inbound tourism, an overwhelming percentage by any measure. Canada is second to the U.S., providing over 1.1 million or 5.1% of arriving tourists. Growth rates for the US and Canada between 2007 and 2008 were 4.6% and 20.1%, respectively.

The source countries in positions three through eight are all European and experienced growth between 2007 and 2008: UK up by 9.2%, Spain +1.9%, France +8.8%, other European countries as a group +14.3%, Italy +0.8%, and Germany +4.2%. The next three source countries, all South

American, also grew: Argentina +13.0%, Venezuela +32.3%, and Brazil 32.7%. While the numbers are considerably smaller than those generated by the US, they represent interesting growth prospects for Mexico with the implementation of targeted marketing plans to these emerging source markets.

Of the BRICMs, it has the least diverse inbound tourist profile. In addition, we believe that Mexico's arriving US tourists are predominantly sun-and-beach oriented and that it has built the tourism industry on mass-market-oriented approaches that have not emphasized the many other natural and cultural resources that the country has in a smaller-scale, sustainable way. In terms of visitor volume, there is very little regional travel, unlike any other BRICM country, and Mexico seems to rely almost entirely on one source country, the U.S., for its tourism health and sustainability.

As a start, in our estimation, Mexico should focus its marketing efforts on expanding the base of US tourists to those in other categories, such as adventure travelers. The nation has an impressive array of natural and cultural resources not yet exploited and marketed to targeted segments of the North American population. In fact, as adventure travelers, we believe that Mexico has not yet tapped its potential as an adventure-travel destination. When we at Xola explored in more detail the geographic and biodiversity profile of Mexico, we were amazed at its depth and breadth, to the point that we believe that Mexico has not yet tapped into the rapidly growing, special-interest tourism trends taking place.

Given Mexico's increasing prominence in the sustainable, low-carbon economy debate and tourism being a major contributor to the economy, we strongly recommend that the country examine its tourism policies and put less emphasis on large-scale mass tourism and move toward a more balanced mix of tourism products, including a substantially increased emphasis on low carbon and water footprint adventure tourism.

Profile of the Mexican Traveler

Mexicans took 14.45 million trips internationally in 2008, down 4.5% from 2007. Almost 95% of those trips were to the US, a huge percentage for one destination. Travel expenditures per departing tourists in other countries increased by 1.8%, however, with average travel expenditures per person growing from $555 to $590. As the inbound visitor volume is dominated by trips from the US, the outbound volume is also dominated by trips to the US.

After the US, the number of trips taken by Mexicans outside the country drops dramatically. The #2 destination in 2008 was France, down 12.5% to 385,000. Of the next five destinations, three grew (Canada up 7.8% to 266.3 thousand; Italy up 47.1% to 119.8 thousand; and Guatemala up 7.5% to 92.9 thousand). The decliners were Spain, down 18.2% to 161.1 thousand and Cuba down 8.8% to 84.1 thousand.

Analysis of outbound travel is easily confused by the huge numbers of people crossing the border into the U.S. daily. However, even excluding the 100 million annual same-day visitors, the US has accounted for over 90% of outbound trips from Mexico every year since 2000. Other countries in Latin America as well as Europe account for a very small percentage of the total. On the other hand, Mexican outbound travel has not suffered some of the catastrophic declines related to their economic crises that Argentina and Brazilian markets have earlier in this decade. The growth rates on long-distance travel show relatively strong performances, potentially showing that Mexicans will travel abroad even under less-than-optimal economic circumstances.

UNWTO data show a 1.8% increase in travel expenditures per departing tourist, growing from $555 to $590. As of 2007 in terms of outbound expenditures, Mexico is the most important tourism market in Latin America, just ahead of Brazil. The comparatively low expenditures per trip are influenced by the large numbers of short-stay, cross-border trips. There are quite a few other studies that demonstrate that relatively affluent Mexicans who travel independently for leisure as opposed to VFR, business and study (whether first-time or repeat visitors) are said to spend freely on accommodation, shopping, transportation and leisure activities.

The OTTI of the U.S. Department of Commerce states that trips to the U.S. break down as follows: 35% leisure, recreation and holidays; 28% VFR; 23% business and professional; 9% conventions and conferences; and 6% other.

Research by the Canadian Tourism Commission showed that, for their holidays, Mexicans travel primarily to see and experience what they cannot at home. Cold weather is not a deterrent, but they like trips and destinations that offer a range of activities and experiences. Trips with a strong emphasis on culture and education, as well as nature, are very popular. Enjoying local cuisine, shopping and nightlife are also highly rated.

Like Brazilians, few Mexicans travel abroad for sun and beach since they have abundant opportunities for this kind of holiday at home. However, Mexicans have one of the lowest "dispersal" rates outside of urban centers when they travel; for example, 80% of Mexican visitors to the UK go to and stay in London, with only 45% of nights spent outside of London. In terms of activities of Mexican visitors to the U.S., 84% are shopping-oriented, dining in restaurants 67%, visits to historical places 28%, visits to amusement or theme parks 26%, sightseeing in cities

21%, visits to small towns 19%, visit to art galleries or museums 17%, nightclubs or dancing 13%, visits to cultural heritage sites 12%, and visits to casinos or gambling 11%. It does not seem that adventure tourism hits the radar screens with this group of travelers.

According to surveys by Synovate, Mexican tourists tend to come from the higher socioeconomic classes, are well-educated and able to speak English. Mexicans generally travel alone or as a couple or family, rarely in a formal group. They are more likely to take their children with them than many other Latin Americans.

Mexicans' travel interests are clearly very heavily focused on the U.S. where so many have friends and relatives and perhaps business interests. Given growth rates, it seems clear that outbound tourism growth will continue over the longer term. We believe that, while Mexicans have chosen the U.S. historically as the destination of choice, this will change over time. Mexican travelers are increasingly sophisticated and will look for alternatives beyond the vacation options the U.S. offers. We are not sure where or when this will benefit the adventure-travel industry. There are individual Mexicans for whom adventure travel is a mission and a lifestyle, but it appears that the market for adventure travelers originating from Mexico is still limited.

Climate Change, Water, Resources, Sustainable Tourism and Adventure Travel in Mexico

Mexico is rich in natural and cultural resources. Currently, it has 25 cultural and four natural Historical Heritage Sites and 39 submitted for consideration. Mexico has approximately 5% of its land protected. Approximately 2,500 species are protected by Mexican legislation. The Mexican government has created the National System of Information about Biodiversity in order to study and promote the sustainable use of ecosystems. Approximately 170,000 square KMS are designated “protected natural areas” in Mexico. These include 34 reserve biospheres (unaltered biosystems), 64 national parks, 4 natural monuments (protected in perpetuity for their “aesthetic, scientific or historic value”); 26 areas of protected flora and fauna; 4 areas for natural resource protection (conservation of soil, hydrological basins and forests); and 17 sanctuaries (zones rich in diverse species).

Despite threats to its forests, Mexico’s forests have real and substantial potential for eco-tourism. While tourism, already one of Mexico’s most important sources of income, has traditionally produced negative impacts on the country’s environment through land-clearing, pollution, and mass-tourism-oriented products and resort developments, we believe that ecologically sensitive tourism could provide economic justification for preserving many of the country’s natural resources.

Particular to Mexico, some 80% of forests are owned by indigenous and other local communities, giving forest land ownership a strong social nature. In the last 25 years, numerous Mexican forest communities have managed to develop reasonably successful commercial community forestry enterprises based on both timber and non-timber products. However, there are still key constraints to making this community forest sector into a high-value provider to niche markets from sustainably managed community forests, delivering both income and biodiversity protection. Observers believe that there will have to be national policies developed to provide financial incentives as well as other types of support to ensure the sustainability of these community forests. Clearly adventure tourism could play a part.

Over the last few decades, rapid industrialization and population growth have left less than 10% of the country’s original tropical rainforests standing. Today Mexico’s rainforests are limited to southeastern Mexico along the Gulf of Mexico and the state of Chiapas. These forests are most threatened by subsistence activities, especially fuel wood collection land clearing, using fire for agriculture. Because of the increase in dry years as a result of climate change, these agricultural fires can spread into virgin forests and have done great damage in the past. Illegal logging and poaching are also widespread in Mexico.

A good example of the still-existing illegal-logging problem is found at the Monarch Butterfly Biosphere Reserve in Sierra Chincua, Mexico. This is the traditional wintering site for tens of millions of monarch butterflies in central Mexico that travel up to 2,800 miles from eastern Canada to a small area of evergreen fir forest that acts as their wintertime sanctuary. Despite an unprecedented drive to protect the area and initial success after offering financial incentives to the 38 communities that owned the land, a recent WWF report showed that deforestation of the area is up nearly 10% over last year, reversing the 48% drop of the previous year. The latest figures have led to calls for emergency measures to persuade one community in particular, responsible for 92% of the deforestation, to switch back to conservation. It has not been successful to date.

Clearly the water-scarcity situation cannot help but have an effect on many different parts of the economy, including tourism. Because of the dominant type of tourism that Mexico has, namely large-scale, resort-driven, mass-tourism products, the lack of availability of water will have a direct and negative impact on the industry's ability to sustain itself. We believe that it needs to take proactive actions to develop and implement adaptation strategies that limit its impact on water resources. We further believe that this is a good time for the adventure travel and other related low-impact tourism segments to push for the development of more sustainable tourism products that will reduce carbon footprints, help minimize the use of water resources, enable sustainable economic development in rural communities, and support the protection of biodiversity, forests, and other natural as well as cultural resources.

We believe that Mexico's shift toward a more sustainable economic model is likely to provide a model that will be adopted by other developing countries around the world. It is an approach that we hope others will follow. There are obstacles ahead for Mexico, but we are impressed with the country's steps toward a leadership role in the climate-change debate. We also believe that Mexico's approach of focusing on whole sectors of the economy, not just isolated projects, is a potential opening for the tourism industry to take a more prominent role in climate-change mitigation and adaptation strategies and to gain access to financing sources as part of combining climate-change and sustainable-tourism economic development goals.

Adventure tourism in particular could gain a higher profile by advocating low carbon and low water footprint alternatives to large-scale, mass-tourism projects. While smaller-scale, adventure tourism may not provide the sheer number of jobs that mass tourism does, it may help provide a way to slow down the steady migration of rural populations to urban areas by providing sound livelihoods in rural communities; to encourage and support biodiversity, reforestation, and other

climate-change mitigation and adaptation strategies; and to provide a host of other benefits that promote diverse, vibrant and sustainable local economies.

Local cycle guide in Sierra Norte. Photo by Jessica Reilly

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