The Determinants of Environmental Sustainability in Africa and Asia

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Abstract

This study investigates the factors that impact environmental sustainability in developing countries. The emphasis on environmental sustainability is necessitated by the realization of scarce resources. Consequently, understanding what contributes to environmental sustainability will help us determine how to better use our resources. Resource sustainability theory is in part used to assess the importance of development, type of government, aid, trade, and geographic location on environmental performance. Correlation and regression analysis are used to analyze seventy-two developing countries in Asia and Africa for the years 2006 and 2008. The results show that development positively influences environmental performance and that Asian opposed to African countries are significantly more environmentally sound. In order to improve environmental sustainability more emphasis should be placed on economic development.

Introduction

Brief History

The concept of sustainable development began in the 1990s (Healey, 1994, p. 427). Many ways to improve environmental sustainability have been suggested since the concept was first developed and a number of them have been put into action but further progress needs to be made. Some people have said that providing sustainable education early on in schools as well as having it available to businesses would enable the world to achieve its goal of lowering the harm humans cause to the earth sooner. If people saw the moral values involved with this concept they might be more likely to support it, which in turn could make funding a little easier. No matter what is done there needs to be a way to measure the progress, or lack of it (Wakefield, 2003, A270).

Recently conducted U. S. surveys found that consumers and administrators view the environment as being a top concern for them in the near future. It has been observed that a large number of people want to take a closer look at how their actions impact the earth (Press & Arnould, 2009, p. 103). The chief motivation humans have for finding methods of environmental sustainability is defending human existence (Goodland, 1995, p. 6). People are starting to realize that if nothing is done about the environmental problem the earth has soon, the chance of human life continuing on in future generations becomes very grim.

Current Related Actions

Each day people around the globe do things that are harmful to the environment and if one looks around, the impact is very noticeable (Clark, 1995, p. 226). The Kyoto Protocol was created just over ten years ago to help reduce the amount of gas discharged into the air, and thereby better regulate the climate of the earth. The agreement was not put into action until the beginning of 2005, but when it took effect a number of regulations were made that would be closely observed for each of the countries that ratified the treaty (Kyoto, n.d.). These regulations included things such as conducting additional studies to try to find better ways to create sophisticated technology and teaching less developed countries (LDCs) the newly discovered ways to build technology that is environmentally friendly (United, 1998, p. 11). In the past technology has improved the lives of humans in multiple ways but it has done more damage than good for the earth (Myers, 1997, p. 212). More countries are now attempting to better the condition of the earth in ways that will at the same time help improve the circumstances that people live in (World, 2008, p. 9). There are currently numerous possible technological solutions to the environmental problems the earth has, but most are very costly to create. Since many countries have insufficient funds to put most, if not all, of these plans into action, they are

seeking the ones that have multiple benefits involved. People usually have higher support for the environmental plans that justify their investments in more than one way (Shrivastava, 1995, p. 198).

Some companies have realized that there are economic profits that can be gained from looking at things from the sustainability perspective. U.S. companies that have been working to produce renewable energy are having trouble trying to determine the best way to distribute it and even if this problem is solved, the issue of cost still comes up. It has been estimated that to provide renewable energy to only 20% of the United States for a ten year time span, it would cost somewhere around 60 billion dollars (Press & Arnould, 2009, p. 105). This is no small price and it would likely be a struggle for the U.S. or any other economically developed country (EDC) to come up with the means of funding this, let alone LDCs. Wise methods of sustainability can still be used if sustainability, with a large amount of policies and costly procedures, seems to be infeasible (Warren, 2001, p. 333). Any improvement, no matter the size, is progress.

This past March U.S. President Barack Obama said, "We can let climate change continue to go unchecked, or we can help stop it" (2009). This shows that there are some countries who feel it is necessary to take a little initiative and work on bettering the condition of the earth. This is not something that can be done with just a minimal amount of effort. Many countries have problems with the idea of promoting sustainable energy and feel that there are other issues that need to be dealt with first. Instead of looking at the ethical issues that humans have with this topic, answers to the problem should receive more focus (Press & Arnould, 2009, p. 102).

No matter the view a country has on this issue it is important for it to identify its goals on the matter. Doing so makes determining the process of how to reach those goals simpler (Lautenschlager, 1998, p. 181). Once a country or company decides its goals for improving sustainability, environmental auditing can be done regularly to figure out how much progress has been made in regards to their stated goals (Goodall, 1995, p. 31). It used to be that environmental auditing was voluntary, but the concept has evolved recently and it may eventually become a requirement in all major business settings (Goodall, 1995, p. 34). Being specific about the goals and gaining support for them is also very beneficial (Lautenschlager, 1998, p. 179).

Starting in the early 1990s the United States, and several other countries, formed organizations that allowed them to trace advancements being made in regards to sustainable development (Clark, 1995, p. 225). In Asia is an organization by the name of the Asia Sustainable and Alternative Energy Program (ASTAE) that has had a major part in aiding LDCs in that region with decreasing energy inefficiency and strengthening renewable energy ideas. This program has done its best to increase the amount of sustainable energy that is being used in an effort to lessen the poverty in certain areas of Asia and in order to shield the earth from further harm. It has also worked to help some of the bigger industries, such as the banking sector, improve things such as their energy management (World, 2008, p. 12). Things are being done to try to protect the earth from further harm, but there is still much that could be changed to make things even better. Improvements would likely be made at a faster rate if more was discovered as to why certain countries are able to progress faster than others, so that was what this study focused on.

Statement of Research Question

How does the stage of economic development, the type of government, the amount of foreign aid, the level of trade, and the geographic location of a country impact the priority it places on environmental performance? The answers to these questions could be quite beneficial and might aid the advancement of environmental sustainability significantly. And in the interest of our planet, the analysis needs to be done sooner rather than later.

Literature Review

Connected Research

Since the concept of sustainable development began, there has been a continued interest in improving environmental sustainability and there have been a variety of theories as to what methods may prove to be the most effective in obtaining the highest results. Some scholars believe that a large amount of the difference between the economic North and South, in terms of the emphasis they place on environmental issues, is on account of the fact that developing countries do not see environmental sustainability as one of their top priorities (Schwabach, 2006, p. 31). A large number of LDCs do not like the way sustainable development is presented because it usually only looks at things from the environmental perspective and any economic concerns are left out (Najam & Robins, 2001, p. 50). However, some people believe that the economy has held its dominance over the environment for far too long and believe this needs to change as soon as possible if an environmental agenda is to ever be accomplished. Determining how to better the quality of Earth's life while still allowing the growth of industries is easier said than done, though (Healey, 1994, p. 433). This can be acknowledged by the belief that many people have had in the past, that there is an incompatibility between environmental defense and

economic progress (Clark, 1995, p. 225). Guidelines that intend to produce a more resourceful nation can and probably will better environmental circumstances, but these regulations might not always do enough to uphold the position of the economy (Bishop, 1993, p. 69).

Some countries view the environment as being an international matter rather than solely a domestic one and other countries have the exact opposite perspective. This difference can have a significant impact on whether environmental issues gain ground. For instance, when the environment is viewed as being a national matter there tends to be an unfair opposition to increased international trade relations (Montes & Magno, 1997, p. 354). A number of previous studies that compared the political leanings of countries to their trade relations argued that many trade conflicts were arising on account of different views on environmental principles between countries. While this has not been proven true in all areas of the world, it may be one of the main reasons that certain countries have not made many environmental improvements (Esty, Srebotnjak, Kim, Levy, de Sherbinin, & Anderson, 2006).

The World Commission on Environment and Development (WCED) believes that many of the environmental problems that exist today and the poverty that is prominent throughout much of the world can largely be solved through sustainable development. One of the main suggested aspects that would aid poorer countries in the transition process is democratizing their political structures. This would enable their economies to become self-sufficient and this would in turn benefit the entire country's population (Clark, 1995, p. 228). The fact that democracy is being promoted as a part of the route towards environmental sustainability suggests that authoritarian governments are perhaps not as likely to make progress at a high rate.

In the past, part of the increase in environmental deterioration has been blamed on global debt crises. Some people believe that debt relief is a necessity if the tendencies that have occurred in the more deprived countries of the world are going to change (Daily, 1996, p. 996). The amount of capital on hand for expansion, the possession of a steady work force, the level of urban development and marketable farm land, as well as the social wellbeing of a country's population have all been called possible factors in determining the level of environmental progress of countries (Clark, 1995, p. 228). Topics such as the climate and population concentrations of countries have also been used as areas for comparison in the past (Esty et al., 2006).

There are various explanations as to what human behaviors have caused the most harm to the earth, but no one theory can provide all the answers. This also seems to be the case in terms of past studies that have looked at what factors impact the level of environmental sustainability in different countries. While some kind of development theory makes sense this cannot possibly be the only factor. If it was, the levels of environmental sustainability in countries that are about equally developed would be far more uniform. It is likely that some of the theories that have been suggested as explanations to what has largely harmed the earth, may also be connected to why certain countries are not doing more to prevent further environmental problems. This would add hypotheses involving things such as global dependency models and political economy theories to the list (Kasperson, Kasperson, & Turner, 1999, p. 566). The values that a society holds are also very influential in bringing about change and therefore could be another factor (Kasperson et al., 1999, p. 567).

Discussion of Independent Variables

This study's dependent variable is environmental performance. In this analysis environmental performance is defined as the level of environmental sustainability that a country holds. In other words, environmental performance is based on the amount of effort a country puts into improving its practices, so that it prevents further harm to the earth's condition. The higher a country's environmental performance rating, the more environmentally sustainable it is. In analyzing this variable, the goal is to determine what factors lead to higher levels of environmental performance. This is attempted by the exploration of the five following independent variables: economic development, geographic location, type of governance, foreign aid, and trade.

Economic development is defined as the status a country holds in terms of its wealth. It is largely based on what a country earns from the products it makes. For a country to have positive economic development it must sell more than it purchases. Geographic location is just a measure of where on the globe a country is found. For this study that means what continent it is a part of. Type of governance is defined by how a country is run, in terms of what kind of administration it employs. This mainly concerns whether the general population has any say in what their country does. Foreign aid is the outside contributions a country receives from organizations and other nations. It is the extra financing, needed to get by. Trade is the buying and selling of products among different international countries. It is usually most beneficial to a population when its country has items to export, as well as import.

Restatement of Research Question

How does the stage of economic development, the type of government, the amount of foreign aid, the level of trade and the geographic location of a country impact the priority it places on environmental performance? Figuring out the answer to this question may teach humans a great amount, in terms of what the next best and necessary steps for the world's future are.

Research Design

Project Hypotheses

This study sought to answer five main questions.

H1. Do different stages of economic development impact the level of support there is in a country for environmental performance?

H2. Do certain types of governing systems not see the environment as being of very high importance compared to other types of governance?

H3. Are countries that receive large amounts of foreign aid more likely to focus on environmental performance than ones that do not receive as much aid?

H4. Does the amount of trade that occurs within a country have any effect on whether the country favors promoting environmental performance?

H5. Does the location of a country have any impact on environmental performance?

The first hypothesis this study made was: there is a direct relationship between the economic development of countries and the priority they put on environmental performance. This hypothesis was partially formed on the basis of the statement made by Schwabach (2006) that, "rich countries are lined up on the environmentalist side while developing countries make development a higher priority" (p. 31). This is a valid point to bring up because LDCs are likely going to want to build up the living conditions of their people before focusing on environmental sustainability. However, some LDCs may be willing to put a percentage of their funds towards promoting environmental sustainability, if they can first put a set portion aside for development. On the other hand, an EDC may be able to contribute a high percentage of funds toward improving their country's environmental sustainability before having to pay for other things.

Goodland and Daly (1996) say that asking underprivileged nations to reduce their development is unethical and for this reason wealthy nations need to guide the way to improving environmental sustainability (p. 1004). The decision of most LDCs to support environmental sustainability depends on them receiving aid from other countries. Since this is the case foreign aid was chosen as another independent variable. It was hypothesized that countries receiving larger amounts of foreign aid per year would place greater emphasis on environmental sustainability and therefore have better environmental performance ratings (Development, 2008).

All decisions regarding the level of environmental sustainability a country plans to attain are going to be made by the government of the country. Therefore, looking at whether or not the different types of governance impact the priority they place on the environment could be another beneficial area to analyze. The CIA World Factbook (2008) defines over thirty different types of governments and classifies each of the world's countries into one or more of these types. To make analysis in this study easier the government type of each country was broadly classified as

being either authoritarian or democratic. The hypothesis made for this independent variable was that democratic governments will place more focus on environmental performance than authoritarian governments.

Another hypothesis this study made was that the higher the level of trade is in a country, the more likely it is that the country is going to concern itself with its environmental performance. This hypothesis was made on the basis that trade relations between countries work best when both sides have the same view on issues. If two countries have completely differing views on something such as environmental concerns, it is unlikely that they are going to agree on trade relations. For instance if country A promotes environmentally friendly practices it is probably not going to want to trade with country B that does not care about doing so and that also emits large amounts of harmful toxins into the air.

The last aspect this study chose to analyze was whether or not the geographic location of a country affects the focus it places on environmental sustainability. Specifically, this study chose to look at all the countries of Africa and Asia. Since Africa has a large number of LDCs and Asia has quite a few EDCs the hypothesis made was that Asia would have a larger percentage of countries placing high priority on environmental performance than Africa.

Discussion of Variables

This study sought to discover how countries with different ranges of economic development and trade varied in terms of their level of environmental performance. It also looked at whether or not the geographic location of the countries or their type of government made a difference in the results. Lastly, foreign aid was analyzed, using multilateral aid per capita, to see if it had an impact on the findings. Economic development was measured by the

GDPPC of each country and how it changed from the previously stated figure. Since countries with lower levels of GDPPC usually receive some type of aid from other countries this study also chose to examine whether or not the amount of aid countries receive has an impact on the priority a country places on the environment and sustainability. The figures used to analyze aid figures were the annual multilateral (monetary) aid statistics. These amounts were divided by the population of the country to get the per capita figure. Using per capita figures for the amounts of trade, multilateral aid, and GDP eliminated the need for the population to be used as an individual variable for constant comparison.

In 2005, Yale and Columbia Universities worked together to create the Environmental Sustainability Index (ESI) and then they also made the Environmental Performance Index (EPI) in 2006. Since these indices were created, both have had an impact on the environmental choices that countries have made. It is fairly obvious that the two indices are related, but they each focus on different things. The ESI examines the past and present and then gives estimates for the level of future progress countries will make based on the actions that have been taken or that are planned. The ESI also compares the results of countries to each other and this is the basis for all of the conclusions that are drawn. The EPI, on the other hand, scores countries based on sixteen different criteria that each country's administration is responsible for. A country must have all of sixteen criteria to receive an EPI score. The scores range from one to a hundred and the higher the score is the better a country is doing in terms of their environmental performance. Since the EPI does not base scores on the results of other countries it gives a little more accurate of a picture as to where the countries of the world are sitting in terms of efforts to increase environmental sustainability (Esty et al., 2006).

Method of Testing

To start out two different areas of the world with dissimilar GDP levels were chosen for analysis. This study chose to compare all the countries of Africa to those of Asia. This allowed for a large number of results to be analyzed because combined the two continents have over one hundred countries. Next the countries were sorted by whether or not they received EPI ratings, in the 2006 and 2008 reports put together by Yale and Columbia Universities (Esty, Kim, Srebotnjak, Levy, de Sherbinin, & Mara, 2008). The countries that received an EPI rating were then analyzed in terms of their type of governmental system, as well as their annual amounts of foreign aid and trade.

All of the values that were collected, for each data category, were entered into a spreadsheet for easier organization. Data that was not originally numeric was converted to numeric values so that it could be used in the correlation as well. For instance, all of the African countries received a value of zero and those from Asia were assigned a value of one. The authoritarian and democratic governments also received numeric values of zero and one respectively for plotting in the spreadsheet. The gross domestic product (GDP) was collected for 2006 and reported in billions. The figures for multilateral aid also came from 2006 and were reported in millions. These statistics were collected from the World Development Indicators data disc (2008). Since statistics are always released a few years after the period they are obtained for the most recent values available were from 2006. Countries that did not have any statistics for GDP, trade, and multilateral aid were assigned missing values that were not realistic for the general range all of the other countries were in. The population figures for 2006 are not exact because they were rounded off for easier data comparison. The GDP, multilateral aid, and

trade figures originally obtained were each later divided by the populations of the corresponding country to obtain the per capita statistics.

Once all of the data had been collected and put into the spreadsheet it was put into a program by the name of SPSS for correlation and regression analysis. This study used Pearson Correlation because the dependent variables being measured were on an interval scale. For a correlation result to be meaningful to the study it had to have significance at the 0.05 level or better, so that it yielded least a 95% confidence interval. While the program provided results for the relationship between each of the variables, the ones of most interest were the EPI ratings in relation to the independent variables.

Discussion of Findings

Overall the model was found to be extremely significant for both years. These results were based on each independent variable being individually compared to the dependent EPI scores. When the EPI scores from 2006 were used as the dependent variable a total of 70 countries were included in the model of analysis. A list of these countries is provided in Appendix A. Not all 101 countries of Africa and Asia were included in the analysis because some of the categories had missing data and would not have yielded accurate results.

This model is said to explain 29% of what impacts the EPI scores for 2006. It found that GDPPC had a significant impact on the EPI scores. Countries with higher levels of GDPPC have greater EPI scores. Geography was not far from being considered significant and according to the results of the model the Asian countries tended to have greater EPI scores than African countries. The type of governance was leaning towards authoritarian countries being more likely to place importance on environmental performance, but the results were far from significant.

The levels of trade and foreign aid did not appear to have any impact on the countries' EPI scores. Since GDPPC has the largest t-score overall, this suggests that in the short run economic development is the biggest determinant of environmental performance.

Table 1 - *Dependent Variable: 2006 EPI scores*

Number of countries in analysis: 70 **Adjusted R Square:** .288 **Overall model significance:** .000*

Independent Variable	**Beta**	**T-score**	**Significance**
Trade per capita	-.033	-.325	.746
Multilateral aid per capita	.088	.804	.424
Type of government	-.019	-.174	.863
Geography	.215	1.929	.058
GDP per capita	.494*	4.554*	.000*

*. Significant at 0.01 level

When the same independent variables were used to analyze the 2008 EPI scores, the two year lag had only a minor effect on the model. This year had a total of 72 countries included in the analysis, on account of the fact that some countries that had not received EPI scores in 2006 were added to the list. A list of the countries that were part of the 2008 analysis can be found in Appendix B. There was a slight decrease in the percentage of explanation the model is said to have in terms of the impact of the independent variables on EPI scores, but it is just two percent lower than the previous model at 27%. The model was still said to have extreme significance overall. Both geography and GDPPC were determined to have a significant impact on the environmental performance of countries. On the other hand, the two year lag found that foreign aid was still insignificant, and it actually changed the direction it had been leaning towards. The type of government and the trade per capita figures for the countries still did not seem to have much of an impact at all on the level of the EPI scores in 2008. So in the long run economic

development still seems to be the largest determinant of EPI scores, but location appears to have an impact as well.

Table 2 - *Dependent Variable: 2008 EPI scores*

Number of countries in analysis: 72 **Adjusted R Square:** .271 **Overall model significance:** .000*

Independent Variable	**Beta**	**T-score**	**Significance**
Trade per capita	-.081	-.792	.431
Multilateral aid per capita	-.029	-.263	.793
Type of government	-.048	-.442	.660
Geography	.346*	3.173*	.002*
GDP per capita	.343*	3.194*	.002*

*. Significant at 0.01 level

The analysis of this model lends support to the hypothesis that there is a direct relationship between the economic development of countries and the priority they place on environmental performance. In the short run it showed GDPPC having an impact on EPI scores. After two years had passed another set of EPI scores was available to compare the same GDP per capita figures to and this was still the case. Therefore some kind of relationship between the two variables must exist.

The hypothesis that countries receiving larger amounts of aid would have better environmental performance scores looked like it had the potential to receive support from the 2006 model's analysis. The results of the 2008 model showed a reversed trend, though. This may be on account of the fact that developing countries receive the largest amounts of aid and they see the need to use those funds in other ways. Countries that do not require as much financial assistance are likely going to be more willing to spend their money on environmental

sustainability efforts. If this study had focused specifically on developing countries the hypothesis may have proved to be true.

This model failed to produce any support for the hypothesis that democratic governments focus on environmental performance more than authoritarian governments. However, this does not mean the theory that different types of government may have varying levels of support for environmental issues is completely wrong. It just means that the way this study was conducted did not provide any significant insight to this area. Things to possibly change in future studies so that more understanding in this area can be obtained will be suggested later.

There was also not any considerable support for the hypothesis that the level of trade in a country impacts its EPI scores. Neither year of analysis provided any significant results to suggest this is the case, but perhaps this is an issue that varies during different periods of time, in relation to a country's economy. Looking at it from another perspective could yield more helpful results.

It did not come as much of a surprise that this study's analysis supported the hypothesis that Asian countries tended to have higher EPI scores than African countries. This is likely on account of the fact that there are more developed Asian countries than African ones, and there was already evidence that countries with more development had higher EPI scores. Surprisingly the percentage of countries that received EPI scores was equal for Africa and Asia each year. However, not each of these countries was included in the final analysis on account of there being missing data in other categories.

The implications of these results are that, countries need to first focus on economic development if they wish to better their environmental performance. Currently countries with

lower levels of GDPPC are generally not receiving very high EPI scores. Nations that are not struggling with their GDPPC, however, are doing much better. This suggests that it is somewhat easier for developed countries to implement initiatives focused on environmental performance. So in order to improve environmental sustainability, more emphasis should be placed on economic development.

Conclusion

Seeing that economic development and geography had a very high significance on the level of environmental performance in the African and Asian countries analyzed in this study helped lend support to two hypotheses. The economic position of a country does factor into the priority, or at least the ability, it has to promote environmental issues and Asia did indeed have a larger percentage of countries that received high ranked EPI scores. However, it is hard to say whether the geographic factor is really a significant finding. Yes, Asian countries had a larger number of high EPI scores than African countries, but did that really just have to do with the fact that they were located geographically in Asia. Probably not, because even though each variable was analyzed individually a country in Asia has a different history and background than one in Africa and this will have a slight impact on things, whether one wants it to or not.

Some areas that could also have an impact on environmental performance that were not analyzed in this study are: the gender of the country's leader or the majority of the people in its administration, climate (the average amount of wind and sunlight a country receives annually), the adoption and enforcement of environmental policy. Technology has a major impact on the lives of countless people all around the world and it has the ability to make environmental sustainability occur more easily. However, measuring the levels of technology of countries

cannot be done very easily because there are so many aspects on which it can be based. Recently there was a Technology Achievement Index (TAI) created, but it is unable to analyze very many countries at this point in time (Desai, Fukuda-Parr, Johansson, & Sagasti, 2002, p. 102). In the future, though, this could be a helpful variable to analyze in relation to environmental sustainability.

This study could have been expanded by looking at all the countries in the world instead of just those in Africa and Asia. Examining a greater period of time, rather than just the differences between two years, also would have enlarged the results of the analysis. At the time of the study it was not entirely possible to do this because there had only been two years prior to the study that had received EPI ratings. Another area of the analysis that could be expanded if the same type of hypothesis was to be tested again would be to look more closely at the type of government each country had. For the sake of time and ease this study divided the countries into just two different categories, but not all types of democracies are run in the same way and some of the countries that were classified as being democratic are actually monarchies, which are very different types of administrations. It would be interesting to see if more specific categories of government would have shown greater tendencies towards a certain side.

While environmental sustainability is no longer an unknown concept, it still has a lot of progress to make if it is to be used to better protect the earth. This study only analyzed a few of the variables that may factor into countries' priority of this topic and it offered suggestions on how to expand this subject in the future. If people took a little more time to learn about the damage that has been done to the earth and what that means for the future, they might find examining these variables well worth the time.

Appendix A

List of 70 Countries Included in 2006 Analysis

Algeria
Angola
Armenia
Azerbaijan
Bangladesh
Benin
Burkina Faso
Cambodia
Cameroon
Central African Republic
Chad
China
Congo, Democratic Republic of The
Congo, Republic of
Cote d'Ivoire
Egypt
Ethiopia
Gabon
Gambia, The
Georgia
Ghana
Guinea
Guinea-Bissau
India
Indonesia
Iran
Jordan
Kazakhstan
Kenya
Kyrgyzstan
Laos
Lebanon
Liberia
Madagascar
Malawi
Malaysia
Mali
Mauritania
Mongolia
Morocco
Mozambique
Namibia
Nepal
Niger
Nigeria
Oman
Pakistan
Philippines
Rwanda
Saudi Arabia
Senegal
Sierra Leone
South Africa
Sri Lanka
Sudan
Swaziland
Syria
Tajikistan
Tanzania
Thailand
Togo
Tunisia
Turkey
Turkmenistan
Uganda
Uzbekistan
Vietnam
Yemen
Zambia
Zimbabwe

Appendix B

List of 72 Countries Includes in 2008 Analysis

Algeria
Angola
Armenia
Azerbaijan
Bangladesh
Benin
Botswana
Burkina Faso
Cambodia
Cameroon
Central African Republic
Chad
China
Congo, Democratic Republic of The
Congo, Republic of
Cote d'Ivoire
Djibouti
Egypt
Eritrea
Ethiopia
Gabon
Georgia
Ghana
Guinea
Guinea-Bissau
India
Indonesia
Iran
Jordan
Kazakhstan
Kenya
Kyrgyzstan
Laos
Lebanon
Madagascar
Malawi
Malaysia
Mali
Mauritania
Mauritius
Mongolia
Morocco
Mozambique
Namibia
Nepal
Niger
Nigeria
Oman
Pakistan
Philippines
Rwanda
Saudi Arabia
Senegal
Sierra Leone
South Africa
Sri Lanka
Sudan
Swaziland
Syria
Tajikistan
Tanzania
Thailand
Togo
Tunisia
Turkey
Turkmenistan
Uganda
Uzbekistan
Vietnam
Yemen
Zambia
Zimbabwe

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