

Regulatory vs Participatory Governance and Environmental Sustainability in Asia

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Introduction and Research Question

Environmental management came up as new area of organized activity in the developing countries in the 1980s. Environmental degradation around the world is the obvious reason, for which developing countries are likely to suffer more than their developed counterparts. Therefore, sustainable development (SD) as an integrative concept combining all the previous development strategies with the new concern of environmental sustainability, has been accepted globally to achieve a balance between economic growth and environmental resources. Again, social dimension of SD, which subsumes many important parameters of good governance is viewed as the key to realizing the economic and environmental dimensions of SD (Khan, 1998). Beginning with the project or program-based approach, environmental management in recent years has given way to environmental governance, particularly in the developing countries as well as internationally. As is known, environment is composed of the renewable and non-renewable resources including the nature's life-support systems, such as land, water, air, minerals, forests and fisheries, etc. In the developing countries, there is significant economic and livelihood dependence directly on environmental resources. Achieving SD nationally and globally would not be possible without giving due attention to the process of how these resources are exploited and administered, and who benefit from these processes. In addition, there is consensus that achieving SD would not be possible without giving due attention to its social dimension, i.e., the question of how these resources are managed and exploited, and who benefit how much from these processes. So, the elements of good, participatory governance, such as accountability and transparency, rule of law, civil and political liberties, peoples' participation in decision-making at all levels, effectiveness and efficiency, etc. largely coincide with the attributes of social dimension of SD.

The relationship between the states, environmental movements and governance systems has been explored from different perspectives, including empirical studies in several countries. Some scholars argue that countries with greater civil and political freedoms and participatory decision process supply higher levels of environmental quality on a sustainable basis. This suggests that democratic institutions with an active role of civil society/NGOs/CBOs may be more important for ensuring the provision of public environmental goods. However, even democratic states vary in their relationship to environmental groups and governments are either inclusive or exclusive in the degree of access to decision-making they provide such groups. On the other hand, there are others, who argue that centrally regulated, even coercive, instruments are more appropriate for ensuring environmental sustainability in developing countries facing heavy biotic pressure on their limited natural resources.

The experiences in different countries of Asia vary, because of the different political, socio-economic and environmental conditions. In some countries, centralized, regulatory environmental governance tends to dominate, while in some others, civil society/NGO participation is quite strong. Do the prevailing environmental parameters in these countries suggest any correlation with specific governance processes? What are the experiences in the ASEAN and SAARC regions? How do they compare with their industrial OECD counterparts? These are the issues this paper looks into. The

analysis is based on the published literature and global indicator databases, such as UNCSO, ESI, World Bank, EIU, etc. on different elements and areas of governance including level of democratic practices, social and institutional capacity, role of CSOs, as they relate to and impact on environmental systems and their sustainability. The framing of regulatory and participatory governance systems is also based on relevant indicators of these databases.

The first section of the paper defines governance and environmental governance, and describes their status in South Asia, ASEAN and EU. The second section lays out a conceptual framework for analysis. The third section is devoted to a comparative analysis of environmental governance in South and Southeast Asia. The fourth sections looks at global data bases for some OECD countries. Final section sums up the discussions.

Defining Governance

Governance in simple term is good government. It actually relates the quality of relationship between government and the citizens whom it exists to serve and protect. ADB (1995) defines governance as the manner in which power is exercised in the management of a country's social and economic resources for development. ADB definition of governance considers four basic pillars of governance: accountability, transparency, predictability and participation (ADB 1995). Following UNDP (1998) and Huther and Shah (1998), governance is defined as the exercise of economic, political and administrative power in the management of the resource endowment (both natural and physical) of a state. It is practiced through mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise legal rights, meet their obligations and mediate their differences (Gonzalez and Mendoza 2002). UNDP (1998) considers five basic dimensions of good governance:

- (a) **Transparency:** free flow of information, accessibility to processes and institutions
- (b) **Accountability:** public, private and civil society actor's accountability to the stakeholders
- (c) **Rule of Law:** fair legal framework and impartial enforcement
- (d) **Efficiency and Effectiveness:** best outcomes for society through efficient use of resources by institutions and processes, and
- (e) **Participation:** mediation of differing interests through broad consensus on political, social and economic priorities.

Governance includes the state, the private sector and the civil society. All three actors are critical for sustaining growth and human development. The state creates a favorable political and legal environment. The private sector generates jobs and income. Civil society (CS) expedites and mediates political and social interaction.

A global 'associational revolution' appears to be underway in many parts of the world and the rise of many voluntary organizations is beginning to have significant impacts on many nations democratic governance (Salamon 1993, Kim 2003). The rise of third sector organizations (TSOs) or non-governmental organizations (NGOs) and the decline of nation states are changing not only the way societal players interact, but also in the decision making process (Koehane 2002). In many developing nations, this pattern of governing challenges the development state model, which relies on a strong and centralized government. Unitary centralized governments are giving way to a network form of structure that consists of public and private partners (Kim 2003a). The rapid growth of CS sector and the growing recognition of CS players in the policy making and service delivery functions meant that a change in the governance process was happening in the world. Though some developed nations experienced more evolutionary changes in the state-CS relationship, many countries of South and

Southeast Asia, especially those, which have witnessed political democratization have undergone changes that are more revolutionary in nature (Gonzalez and Mendoza 2002).

Issues of governance are the centre of many of the most pressing challenges confronting countries throughout Asia. In the East and Southeast Asia, the need for greater transparency and accountability in regulating the financial sector has been the key problems. In South Asia, issues of restricting the reach of the state intervention and improving the delivery of the basic services are high on the agenda. Economies in transition in Central and Southeast Asia are grappling with redefining the role of state, shifting the balance between central and local power, and providing civil service employees with appropriate skills for managing a market economy (ADB 1998). But each nation’s path to good governance is different, depending on culture, geography, political and administrative traditions, economic conditions and many other factors. The scope and scale of activities allocated to the public and private sectors diverse markedly. Governance challenges in Asian region are described in Table 1.

Table 1: Governance Challenges in Asia

Sub-region	Governance Challenge
Former centrally planned Economies	Overextension and over-centralization of the state Lack of appropriate legal framework and skills Greater reliance on the market
Lest-developed countries	Very weak administrative system
South Asia	State tries to do too much Limited resources and capabilities Regulatory ossification
Southeast Asia	“Crony Capitalism” Weak checks and balances in public-private relations Barriers to competition

(Source: ADB 1998)

Environmental Governance

In recent years, a growing emphasis has been placed on governance as a critical underpinning of policy success generally and environmental progress more specifically. Environmental Sustainability Index (ESI) provides some support to focus on governance. In fact, out of the 76 variables used to formulate ESI, the highest bivariate correlation of ESI is with governance indicators (Table 2). Of this, the highest correlation is with civil and political liberties, suggesting that countries where robust political debate takes place, facilitated by fair elections, free speech, engaged press, active NGOs, vibrant legislatures, etc. are more likely to effectively address environmental challenges. The second highest correlation is with survey data on environmental governance.

Table 2: Variables with highest statistically significant correlation with ESI

Variable Code	Variable Description	Correlation Coefficient
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CIVLIB	Civil and Political Liberties	0.59
WEFGOV	World Economic Forum Survey on Environmental Governance	0.54
GOVEFF	Government Effectiveness	0.51
POLITY	Democratic Institutions	0.50
LAW	Rule of Law	0.50
PATICIP	Participation in International Environmental Agreements	0.49

(Source: 2005 Environmental Sustainability Index Report)

Environmental Governance – A Framework for Asia

This section discusses the policy and institutional framework in environmental governance, developed by the authors of this paper and specific to the region. The framework of environmental governance in Asia primarily involves three distinctive levels and two interfaces in between (see Figure 1). The three different levels include 1) *international and regional levels* where the operational entities are primarily international governing bodies, donor agencies, international NGOs and governments; 2) *national level* where government and national-level NGOs together with the private sector remain operational and 3) *grass-roots level* which includes CBOs, local NGOs, local governments and development agencies associated with implementation of development projects. Each of these three levels has distinctive characteristics in terms of functions and form of partnerships among the three types of social institutions. In addition, the two interfaces serve the purpose of coordination and collaboration in between the levels of operations. The first interface is termed as the *national–international interface* and the second one as *national–grassroots interface*. The policy and institutional framework of South and Southeast Asia corresponding to environmental governance will be highlighted with respect to this framework. As mentioned before, the political culture and regimes in the Asian countries obviously determine the nature of operational levels and interfaces among them.

International and Regional context:

At the international and regional level of the policy framework we have observed the existence and participation of agencies of United Nations, international and multilateral donor agencies, non-governmental organizations and governments of different countries. This level mainly focuses on the formulation of policies and agreements setting the global policy-institutional context for sustainable development. Government representatives agreed to work together with international bodies like UN and World Bank by signing agreements which included participation of local communities in promoting SD initiatives the world over.

International development agencies are responsible for putting the agenda on the table and to facilitate public debate on issues of interests. Side by side they also play a major role in persuading the parties to reach consensus, which finally translates into policies and agreements. In recent years, the CS role has been considered as potent in promotion and implementation of SD initiatives. Participation at this level ensures the political space for the CS in formulation of policies and plans. Civil Society has been active towards integration of the environmental and social development in policy planning. It is worth mentioning at this point about their ability to form international networks to mobilize public support for social and environmental issues. The international donor agencies operating at this level distribute funds to governments and NGO/CBOs to implement SD projects. Assistance is also given towards capacity development for environmental stewardship through transfer of technology and knowledge.

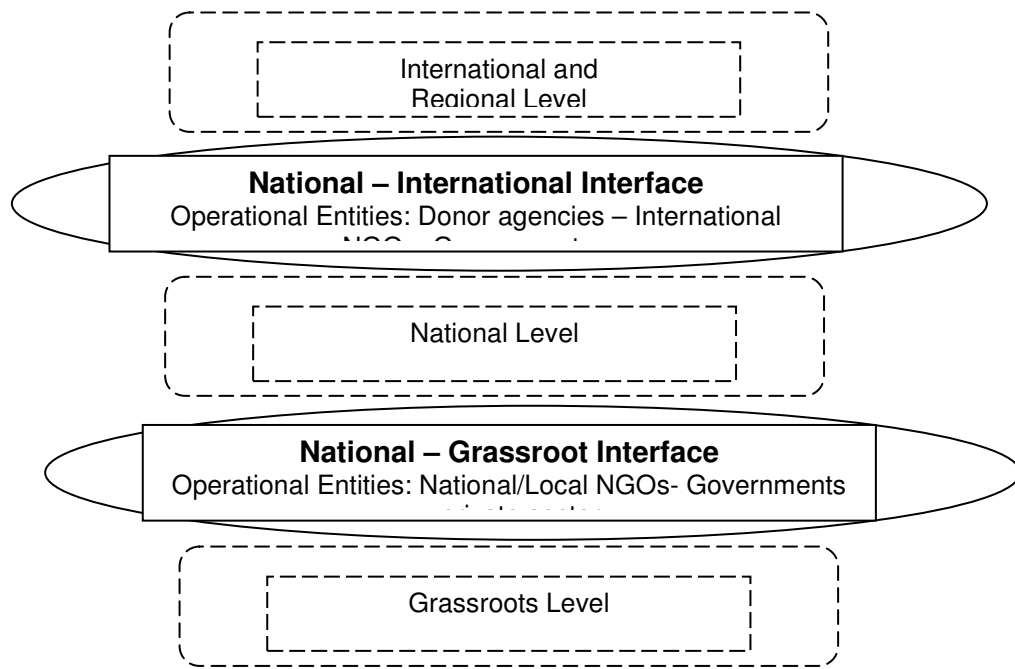


Figure 1: Conceptual Framework – policy institutional context

The private sector however at this level has not always very active unless the issue of discussion had some direct impacts on businesses. But as the engine of growth, businesses play a major role in SD efforts and poverty alleviation. Therefore, the UN Global Compact was signed in July 2000 between the UN and the business corporations around the world. More and more business entities are becoming members of the Compact. Of the 10 principles of the Compact, the goals # 7 to 9 relate to environmental sustainability.

The international and regional context of the policy institutional framework in South and Southeast Asia represents an interactive system that includes the public, private sectors as well as the civil society. Figure 2 illustrates the system characteristics highlighting the different forms of partnerships such as 1) public – private; 2) private – civil society; 3) civil society – public and 4) public – private – civil society for sustainable development.

The nature of the public–private partnership can be characterized by corporate philanthropy, development of market based instruments, policy advocacy etc. Private–Civil society partnership is primarily related to distribution of funds and philanthropic activities to enhance public image of the businesses. On the other hand, civil society – public partnership focuses on policy formulation and giving assistance to government in implementation of SD projects. Above all, the triangular partnership between public–civil society–private sector holds the greatest potential in terms of achieving the SD goals. This type of partnership can be equated with the Strategic Stakeholder Engagement Model, mentioned above.

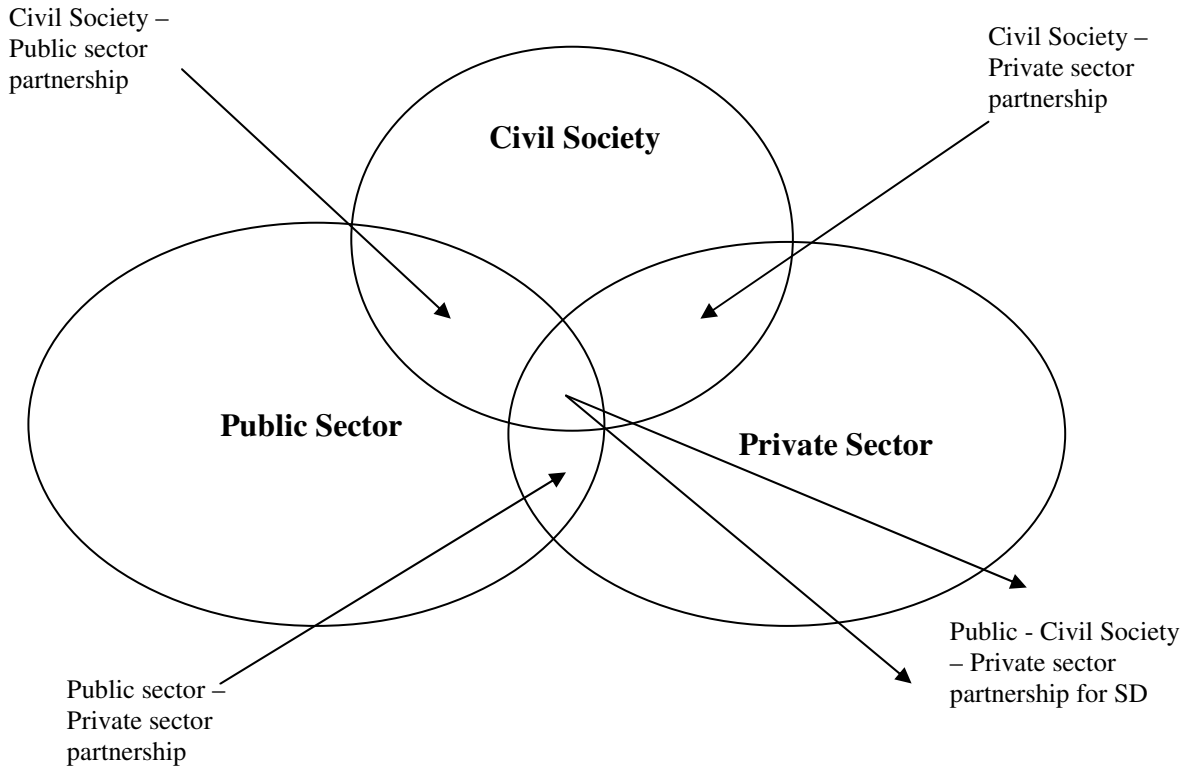


Figure 2: Interactive System – Civil Society, Public and Private Sector

Grass-roots Level:

This level can be identified as the execution phase of the plans and strategies that are formulated at the upper levels. The CS is the most active component of this level and plays a vital role in implementation of SD projects. Civil Society organizations actively participate in rural development activities by raising awareness of the common people. Various type of services provided by the CSOs include primary and reproductive health care, informal education, participatory forestry, micro credit financing, poverty eradication program, natural resource management, women in development and many others. At this level we have observed that the participation of the public and private sector is negligible, especially in those sectors where the CSOs are active. Now question can be raised why such a difference exists at this level as compared to the upper levels where an interactive and collaborative effort is more common. Answer to this question can have two points; first is the preference of the multilateral and bilateral donors in choosing community based organizations for distribution of development aids and secondly the lack of resource and expertise on the side of the government to execute these projects at the grass root level. This stage represents the final phase of the participatory approach to development.

Interface Levels:

The two interface levels as included in the conceptual framework are 1) international-national interface and 2) national – grass-roots interface, where the form of partnerships go deeper than the three layers. These interface layers serve as the medium between the levels and may involve operational entities from any of the three layers of policy formulation and implementation. The international donor

agencies as well as NGOs are very much active at the international – national interface that deals with the distribution of funds. They work in collaboration with government agencies as well as civil society groups at the national level. The second interface between the national and grass-roots level involves regional community groups and local government authorities that interact with the organizations, which are involved with rural development, poverty alleviation and resource management activities.

Environmental Governance in the EU

The role of civil society in environmental governance in the European Union is regarded to satisfy the main characteristics of the strategic stakeholder engagement model of Zarsky and Kay (2000). The EC White Paper on Governance calls for renewal of the 'Community method' by advocating less of a 'top-down approach' and an expansion of its policy tools with non-legislative instruments. The EC wants to encourage the development of civil society and the Commission advocates that the CS must follow the principles of good governance (EC, 2001). The five underlying principles are: openness, participation, accountability, effectiveness and coherence. The CSOs are perceived as a major contributor of the democratic system of environmental governance. The contribution of civil society has been recognized as a significant factor in furthering the model of participatory democracy. In the European Union, the framework of participatory democracy views civil society as the facilitator of open dialogue and one of the major stakeholders of the policy formulation procedure. The commission has been engaged with civil society at different levels of policy development through public consultation and seeking for advice. For example, twice a year, the biggest pan-European environmental NGOs (Group of Eight) meet with the Director General of the Environment Directorate to discuss the work program and their mutual relationships. The Environment Directorate also organizes a twice-yearly "EU and Candidate Countries NGO Dialogue on Accession (EC, 1999). However, it is important to keep in mind that the participatory democracy model of EU is still evolving and implementation of the principles of this model still lacks the EU-wide acceptance.

Environmental Governance in the ASEAN

The experience of civil society in environmental governance in ASEAN countries signifies their capability in forming broader coalitions, international networks and umbrella groups. Poverty alleviation and the need for environmental justice appear to be the main concerns of NGOs in the ASEAN countries. Environmental movements in the Philippines and Thailand in particular tend to focus on what have been called the environmental problems of poverty: the lack of access by the poor to environmental resources or their suffering from the direct impact of pollution (Lee & So 1999). A significant number of CSOs are rendering their services in the field of environmental monitoring and management as well. The number of these institutions is also increasing. More and more the civil society has been engaged in providing environmental education services and also as a complementary agent to government actions. This type of services by civil society corresponds to the second role as identified by Zarsky and Kay (2000), i.e., corporate self-regulation model. However the successful emergence of civil society and their integration into the decision making process have been questioned by many, because of the oppositional view point which is widely perceived among the policy community. It will take time before the transition from the command and control approach to more open and democratic system can be realized.

Environmental Governance in South Asia

Environmental NGOs and movements in South Asian countries evolved primarily from the concern of poverty-related environmental problems, or environmental justice, as mentioned before. Historically,

the Sub-continent has been a biomass-based civilization and till to date the rural poor depends in varying degrees on natural resources for their livelihood support. However, with nationalization and privatization of the former common property resources, the poor were deprived of some of their customary rights. The result was a tension between the state and the local communities, which sometimes even turned into violent conflicts. The modern-day Chipko movement led by local CBOs in India is an example.

South Asian CS members have always been active in national and international dialogues on environmental governance (Banuri et al. 2002), playing leadership roles particularly at the national-international interface, discussed earlier. There are several reasons behind growing activism of the CS in South Asia since the 1980s:

- 1) all the major donor agencies repeatedly highlighted the significance of partnership with CSOs as a core strategy of improving the performance of development aid;
- 2) increasing amount of donor funds channeled through CSOs enhanced their clout.

However, the industry always favors self-monitoring and voluntary initiatives to control environmental pollution, whereas the demands to improve environmental quality primarily come from the civil society and partly from the government side. For example, the government of India has already adopted various free market economic norms and economic instruments to encourage private sector investment and use of environment-friendly products and services. Another significant progress that has been achieved in India is the formation of an Environmental Information System for wider dissemination. Similar examples are also prevalent in other countries of this region. The purpose of mentioning these activities is to focus on the role of the state in this framework of environmental governance.

On the side of the private sector, weak market demands for environment-friendly services as well as lack of awareness among the corporate leaders are worth mentioning. Experts believe that full cost accounting practices such as National Resource Accounting must be integrated with the policy formulation stage. Similarly, the civil society also has limitations, such as public acceptance and credibility. Weak organizational capacity and poor communication skills have significantly reduced their impact in policy formulation and implementation. Moreover, most of the NGOs that have mushroomed in recent years are heavily dependent on external funding, which in most cases involve conditionalities, not suitable from the recipient's point of view. Lack of understanding of local realities and lack of coordination between the donor agencies and policy makers can be mentioned as the major lacunae.

At the regional level, in environment-related SAARC documents, there is not much provisions about the CS involvement. A Technical Committee on Environment was formed in 1992 to coordinate regional cooperation in Environment and related areas. The SAARC Environmental Action Plan that was adopted at the Male Ministerial in 1997 includes one strategy as "increasing people's sensitivity to, and involvement in, finding solutions for environmental problems in the region through awareness and educational programmes." Besides, the Dhaka Declaration adopted at the 13th SAARC Summit held in December 2005 "noted the proposal from the Maldives to convene an expert's group meeting on establishing a Civil Society Resource Centre." This is a welcome proposal for the CS in the SAARC region.

Comparative Picture of Environmental Governance in South and Southeast Asia

The paper presents a comparative picture of the fifteen countries of South and Southeast Asia based on the Environmental Sustainability Index (ESI), published by the World Economic Forum, Davos to represent environmental sustainability. WEF defines ESI as a derivative of five major components: 1) current condition of the environmental system, 2) pressures on the system, 3) assessment of human vulnerability, 4) social and institutional capacity and 5) the level of participation in global environmental stewardship. The ESI framework includes 21 indicators and 76 variables in their 2005 report. Table 3 describes the selected countries with their ESI scores in 2005.

Table 3: Selected Countries of Asia and their ESI Score in 2005

Country	Country Code	ESI Rank	ESI Score
Bangladesh	BGD	114	44.1
Bhutan	BTN	43	53.5
Cambodia	KHM	68	50.1
China	CHN	133	38.6
India	IND	101	45.2
Indonesia	IDN	75	48.8
Laos	LAO	52	52.4
Malaysia	MYS	38	54.0
Myanmar	MMR	46	52.8
Nepal	NPL	85	47.7
Pakistan	PAK	131	39.9
Philippines	PHL	125	42.3
Sri Lanka	LKA	79	48.5
Thailand	THA	73	49.7
Vietnam	VNM	127	42.3

Out of the selected 15 countries, Malaysia is the highest ranked (38th) and other countries on the top of the list are: Bhutan (43rd), Myanmar (46th) and Laos (52nd). On the contrary, the countries on the bottom of the list are: India (101st), Bangladesh (114th), Philippines (125th), Vietnam (127th), Pakistan (131st) and China (133rd). ESI score of these countries ranges between 38.6 (China) to 54 (Malaysia).

Based on the published scores of ESI in 2001, 2002 and 2005, a trend analysis was conducted to observe the changes in ESI score of the selected countries (Figure 3). Two trends are evident: some countries like Bhutan, Vietnam, Bangladesh and Sri Lanka marked improvement in the score from 2001 to 2002, but a decline in 2005 and some countries, such as China, Malaysia, India, Indonesia, Philippines, showed a positive trend in ESI score.

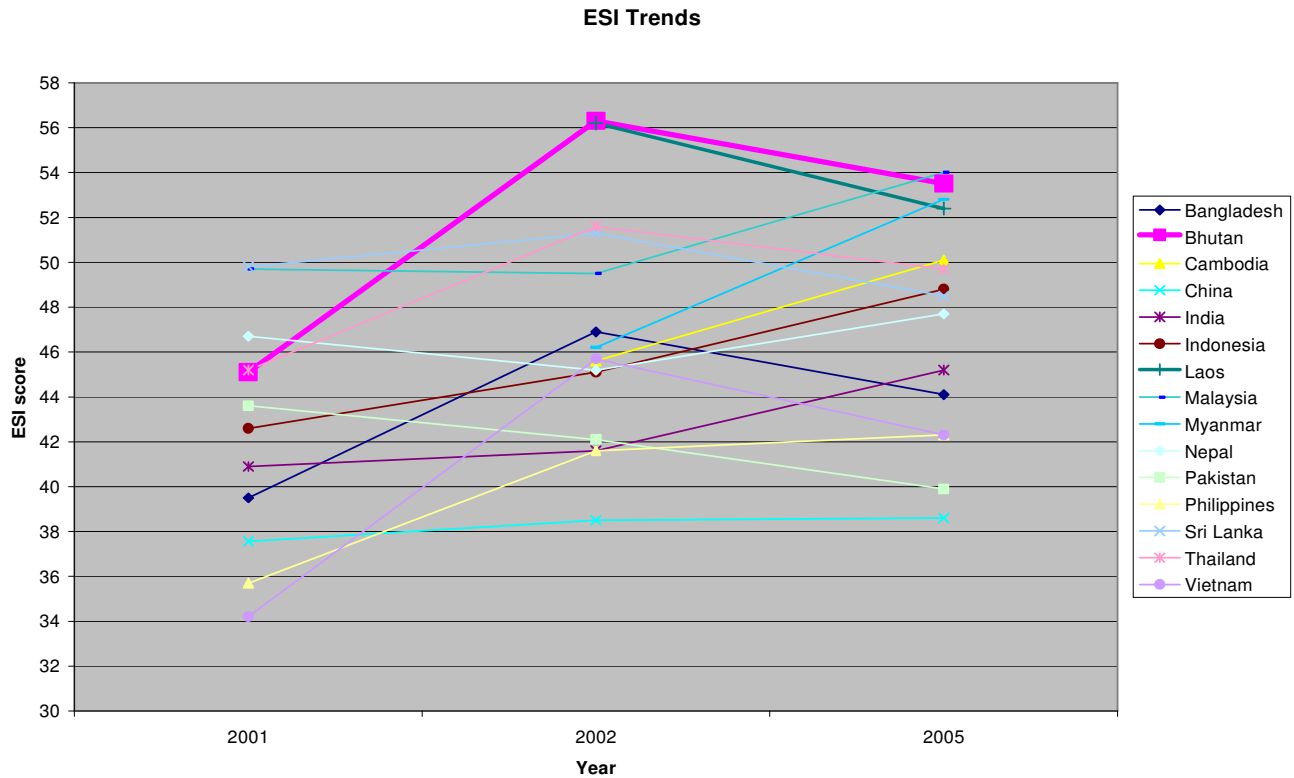


Figure 3: ESI trend of selected countries for 2001 - 2005

To analyze the governance issues of the selected countries, we considered Worldwide Governance Indicators (WGI). The indicators measure six dimensions of governance: Voice and Accountability, Political Stability, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption (Kaufmann *et al.* 2008) and measured in a scale of -2.5 to +2.5. Table 4 shows the six dimensions of WGI with relative measurements.

Table 4: WGI and measurements for six dimensions

WGI Dimension	Measurements
Voice and Accountability	Participation on the selection process of the government Freedom of expression Freedom of association Free media
Political Stability	Perceptions of the likelihood that the government will be destabilized
Government Effectiveness	Quality of the public services Quality of civil service Degree of independence from political pressure Quality of policy formulation and implementation Credibility of government's commitment
Regulatory Quality	Ability of government to formulate and implement policies Promotion of private sector development

Rule of Law	Agents' confidence and acceptance to rule of law Quality of contract enforcement, property rights Police and court Likelihood of crime and violence
Control of Corruption	Extent of public power to access private gain

To analyze the changes of the six dimensions of WGI in selected countries, trend analyses were conducted to observe the relevant changes. Figures 4 to 9 show the relevant trends of six dimensions of WGI from 1996 to 2007. From the analysis it is evident that there are no significant changes in various dimensions of WGI in the selected countries. Table 4 shows the scores of six dimensions of WGI for 2005 and Figure 4 shows the trends of the dimension Voice and Accountability for the period 1996-2007 for these countries. Table 5 shows no definitive trend as well in the WGI index. Government effectiveness & rule of law values seem to be higher in Malaysia, Singapore, where voice and accountability scores are quite low.

Table 5: WGI dimensions for selected countries for 2005

Country	Voice & Accountability		Political Stability		Gov. Effectiveness		Regulatory Quality		Rule of Law		Control of Corruption	
	% Rank	Est.	% Rank	Est.	% Rank	Est.	% Rank	Est.	% Rank	Est.	% Rank	Est.
Bangladesh	32	-0.52	14	-1.14	20	-0.89	18	-0.95	22	0.87	8	-1.23
Bhutan	19	-1.01	87	1.14	65	0.34	50	-0.13	66	0.58	80	0.87
Cambodia	20	-1.00	31	-0.50	18	-0.92	33	-0.50	11	1.14	11	-1.13
China	7	-1.52	37	-0.26	56	-0.08	46	-0.26	43	0.42	31	-0.70
India	62	0.40	23	-0.79	52	-0.11	48	-0.21	57	0.13	48	-0.31
Indonesia	44	-0.16	12	-1.29	37	-0.46	36	-0.48	22	0.86	19	-0.88
Laos	5	-1.67	36	-0.30	13	-1.04	12	-1.20	15	1.03	12	-1.11
Malaysia	44	-0.17	63	0.47	81	1.01	66	0.52	65	0.56	64	0.26
Maldives	0	-2.18	72	0.79	61	0.16	63	0.36	59	0.25	48	-0.32
Myanmar	22	-0.97	21	-0.88	2	-1.63	1	-2.24	3	1.60	0	-1.59
Nepal	14	-1.17	1	-2.35	15	-0.96	26	-0.61	24	0.83	28	-0.75
Pakistan	16	-1.05	5	-1.71	34	-0.53	29	-0.59	21	0.87	17	-0.99
Philippines	52	0.04	17	-1.07	55	-0.08	52	-0.05	42	0.44	36	-0.61
Singapore	51	0.04	88	1.15	100	2.17	100	1.80	96	1.81	98	2.19
Sri Lanka	41	-0.21	10	-1.35	39	-0.41	48	-0.21	54	0.05	50	-0.26
Thailand	50	0.03	26	-0.65	66	0.40	64	0.41	56	0.10	54	-0.19
Vietnam	9	-1.43	60	0.36	47	-0.29	29	-0.57	44	0.41	27	-0.77

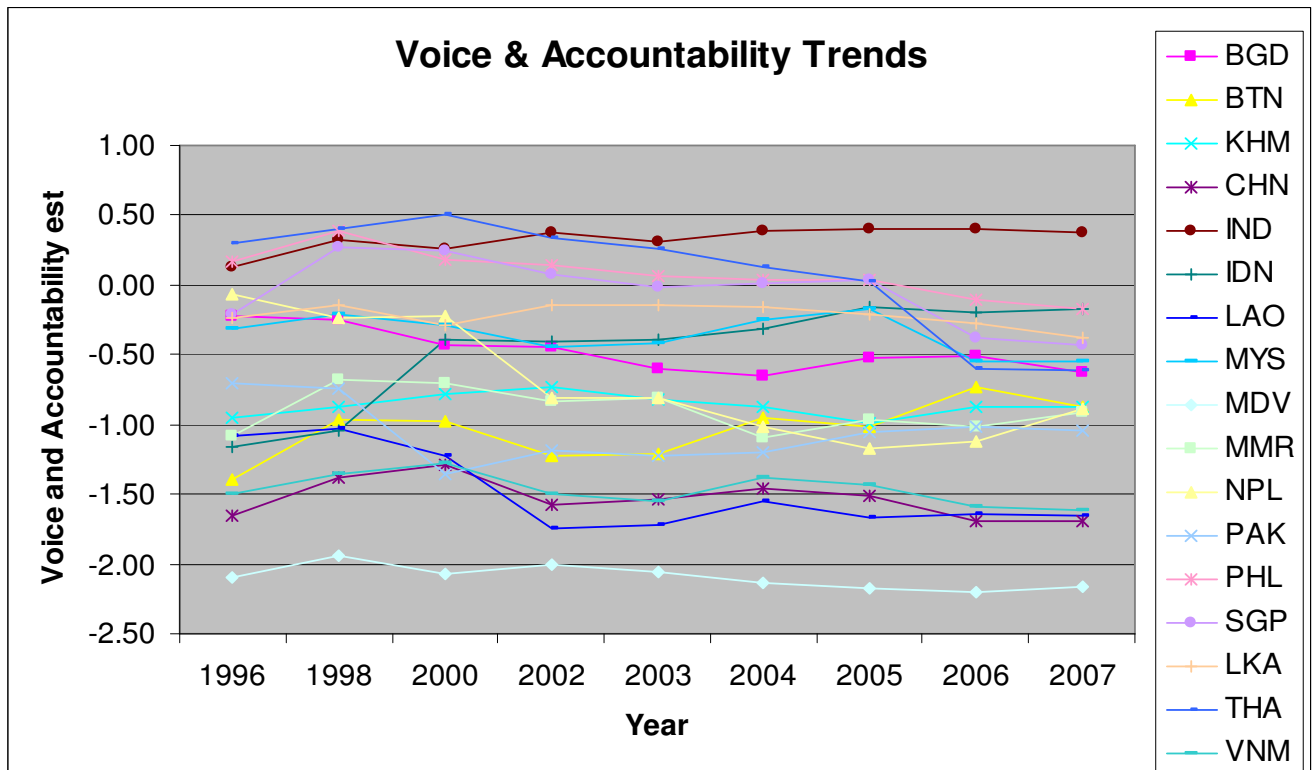


Figure 4: Trends of Voice and Accountability from 1996 to 2007

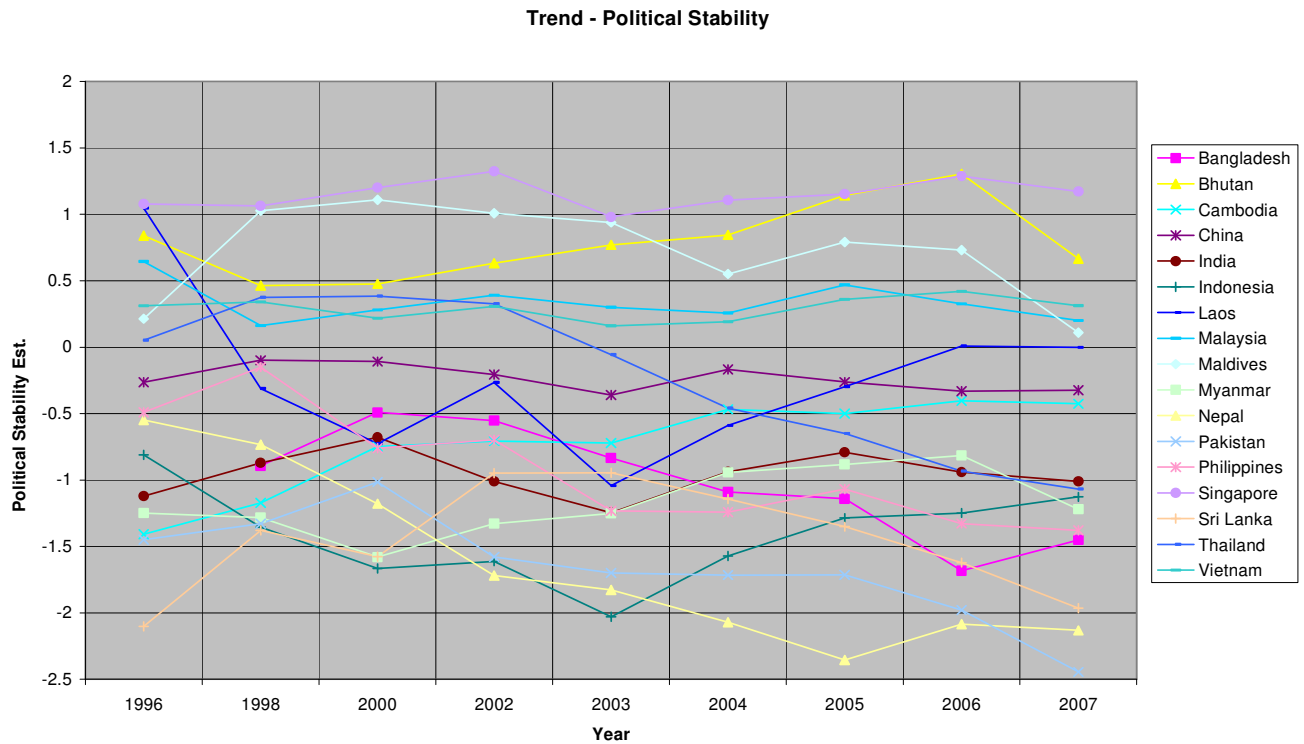


Figure 5: Trends of Political Stability from 1996 to 2007

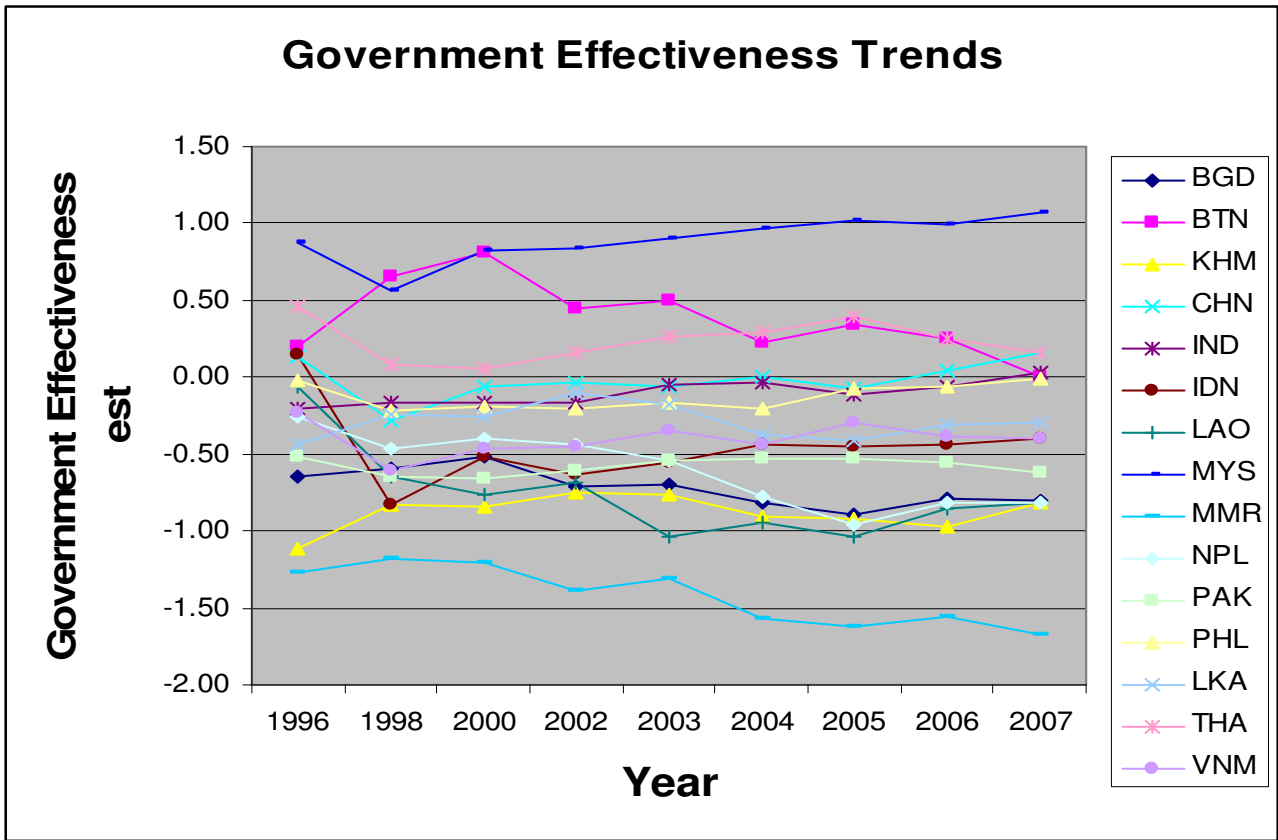


Figure 6: Trends of Government Effectiveness from 1996 to 2007

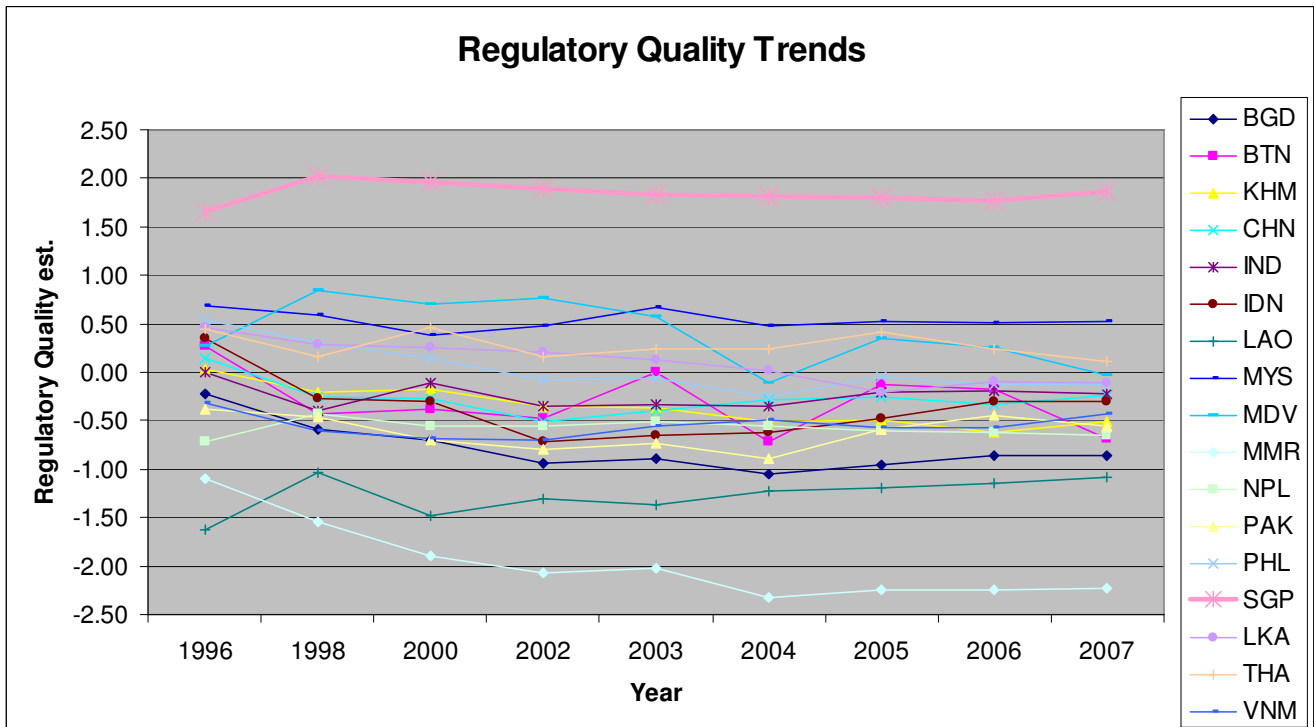


Figure 7: Trends of Regulatory Quality from 1996 to 2007

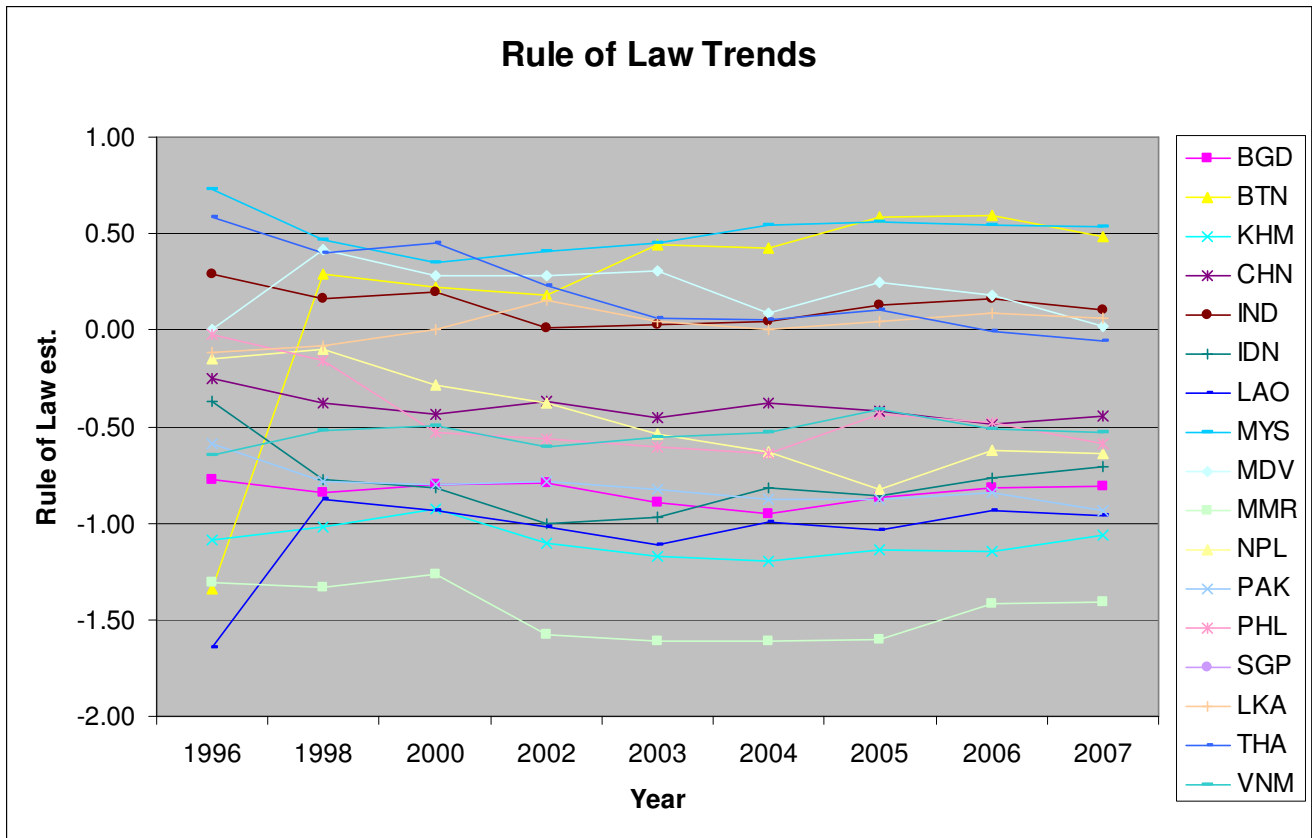


Figure 8: Trends of Rule of Law from 1996 to 2007

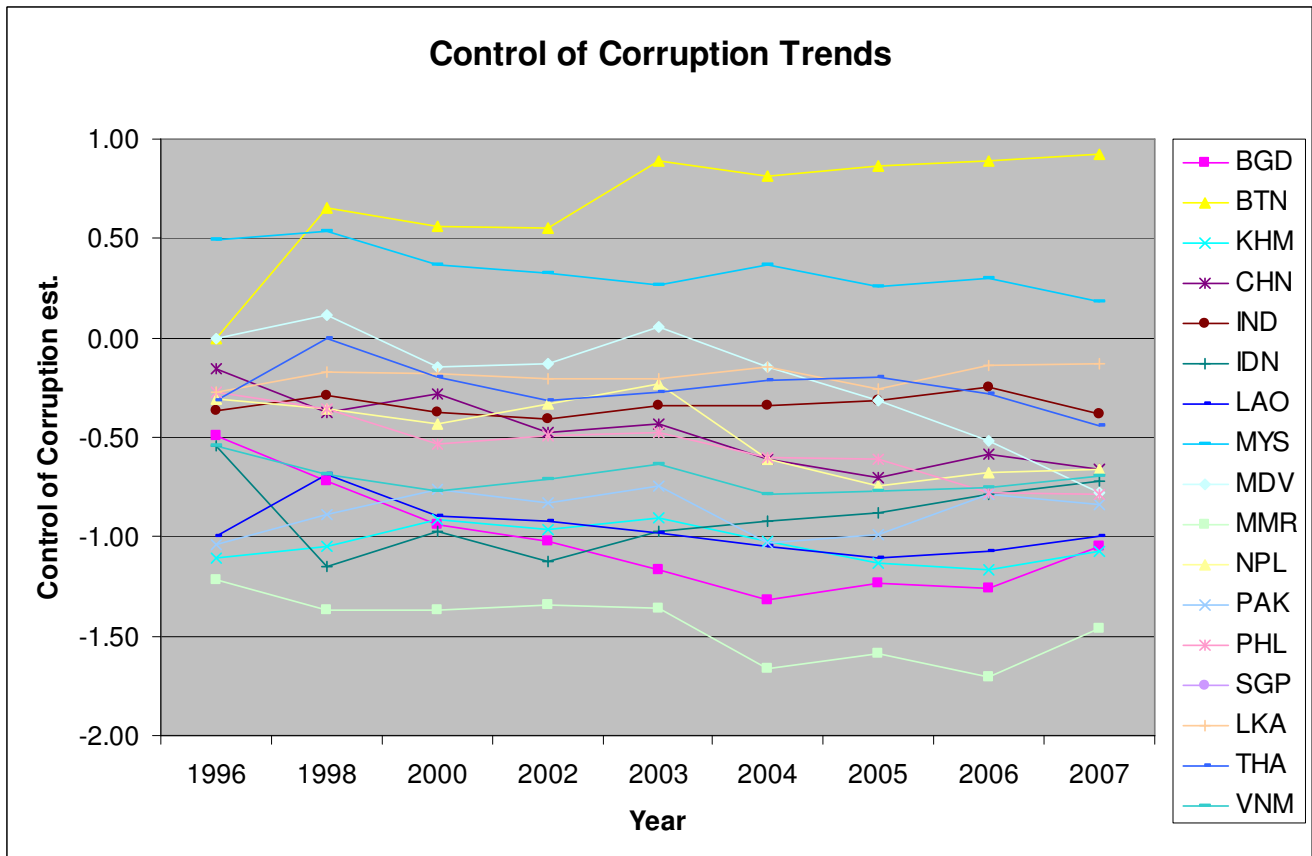


Figure 9: Trends of Control of Corruption from 1996 to 2007

Analysis of the Correlation between Democratic Practices and Environmental Performance

To analyze the correlation between environmental sustainability and governance, ESI score and scores of six dimensions of WGI were regressed for the year 2005. Figure 10 shows the relationship between the first dimension of WGI, Voice and Accountability with ESI 2005 score. From the analysis, we can see that there is almost no relationship between voice and accountability with ESI 2005 score. The analysis shows a mixed relationship between voice and accountability (governance) with ESI (environmental sustainability). Countries like India (+0.4), Philippines (+ 0.04) having highest score in voice and accountability among the countries but have a very low ESI score. On the contrary countries with very low score on voice and accountability, eg, Bhutan (- 1.01), Myanmar (- 2.18), Laos (-1.67), Cambodia (-1.00) have higher ESI scores among the analyzed countries. We also have countries with very low score on voice and accountability, eg, China (-1.52), Pakistan (-1.05) and Vietnam (-1.43) with very low ESI scores. In addition, there are also countries with higher voice and accountability score like Malaysia, Thailand, Indonesia and Sri Lanka having higher ESI scores. So Figure 10 shows us a very unclear relationship between voice and accountability with ESI for 2005.

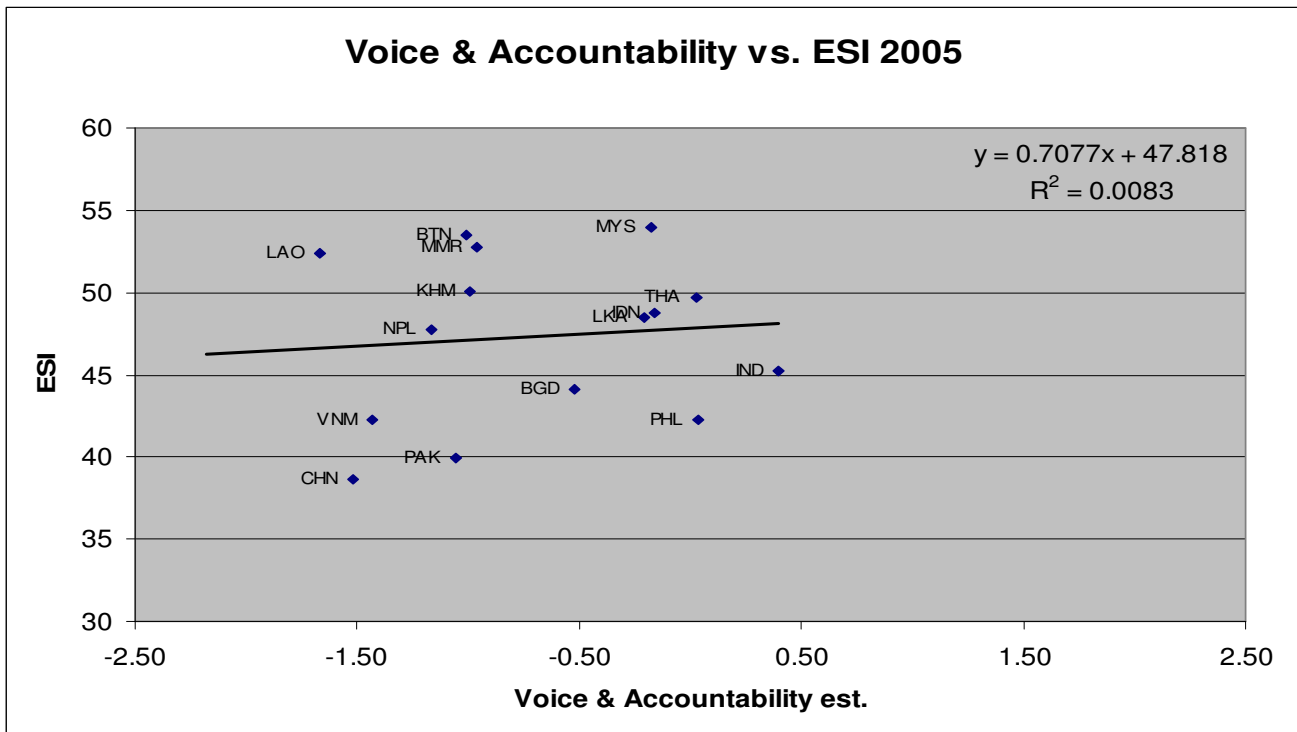


Figure 10: Voice and Accountability vs ESI

Figure 11 shows us the relationship between Political stability with ESI for 2005. Also, in this case there is no relationship between political stability and ESI 2005 score. In this graph, Malaysia (+0.47) and Bhutan (+1.14) having highest political stability scores among the selected countries have higher ESI scores too. There are also countries like Myanmar (-0.88), Thailand (-0.65), Nepal (-2.35) and Indonesia (-1.29) being less politically stable among the selected countries have good ESI scores. Countries like Bangladesh (-1.14), Pakistan (-1.71) having lower political stability score also performs badly in terms of ESI 2005 score. But there are also countries like Sri Lanka (-1.35) with lower

political stability but higher ESI and China (-0.26), Vietnam (+0.36) with higher political stability but lower ESI scores.

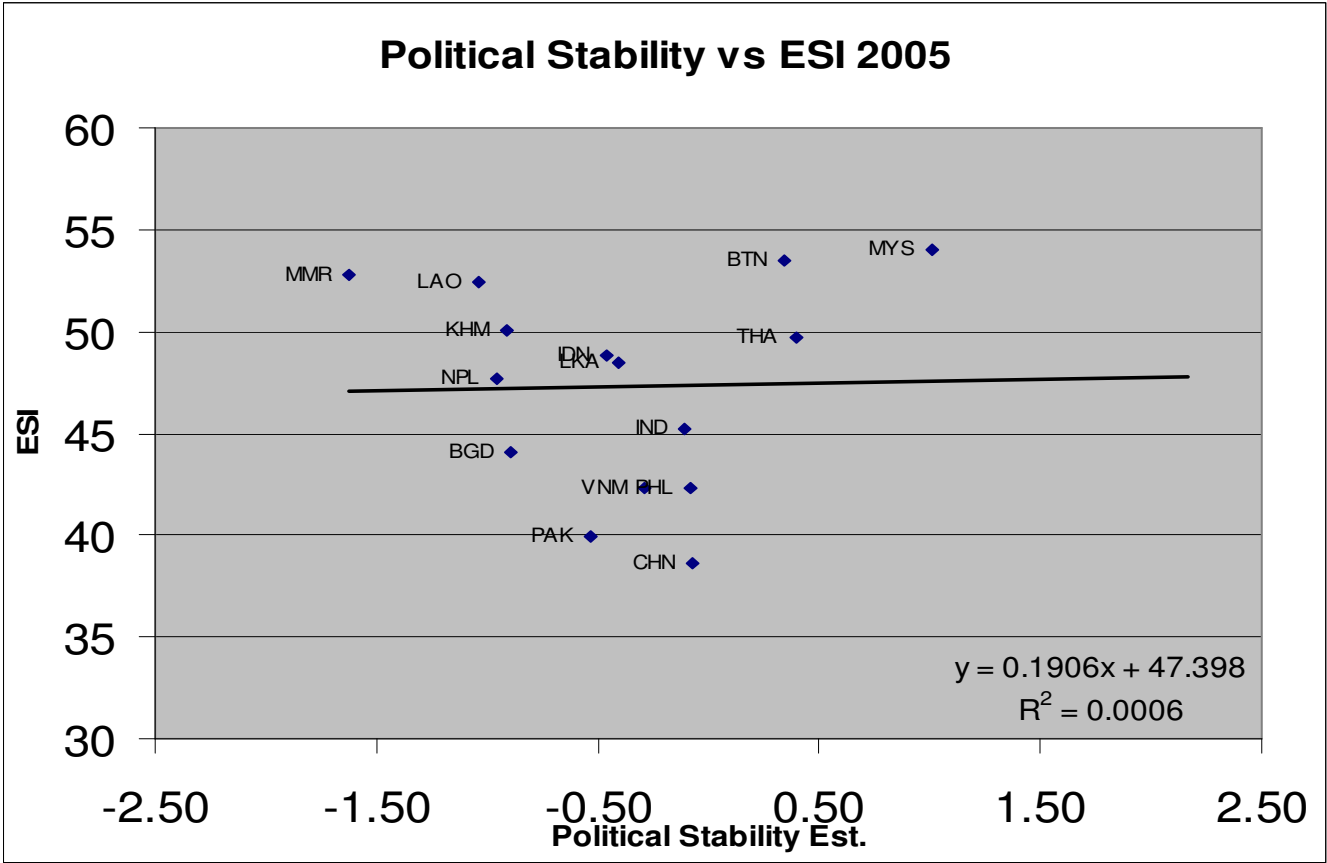


Figure 11: Political Stability vs ESI

Figure 12 shows the relationship between the 3rd dimension of WGI, government effectiveness with ESI 2005 scores. Like the other two dimensions discussed above, government effectiveness also does not have any predictable relationship with ESI. Though the graph shows countries with higher government effectiveness score, like Malaysia (+1.01), Bhutan (+0.34) and Thailand (+0.40) have higher ESI scores; countries like Myanmar (-1.63), Nepal (-0.96), Cambodia (-0.92) and Laos (-1.04) having lower government effectiveness are also doing well in terms of environmental sustainability based on ESI 2005 scores. India (-0.11), China (-0.08) and Philippines (-0.08) having moderately higher government effectiveness among the analyzed countries have very low ESI scores.

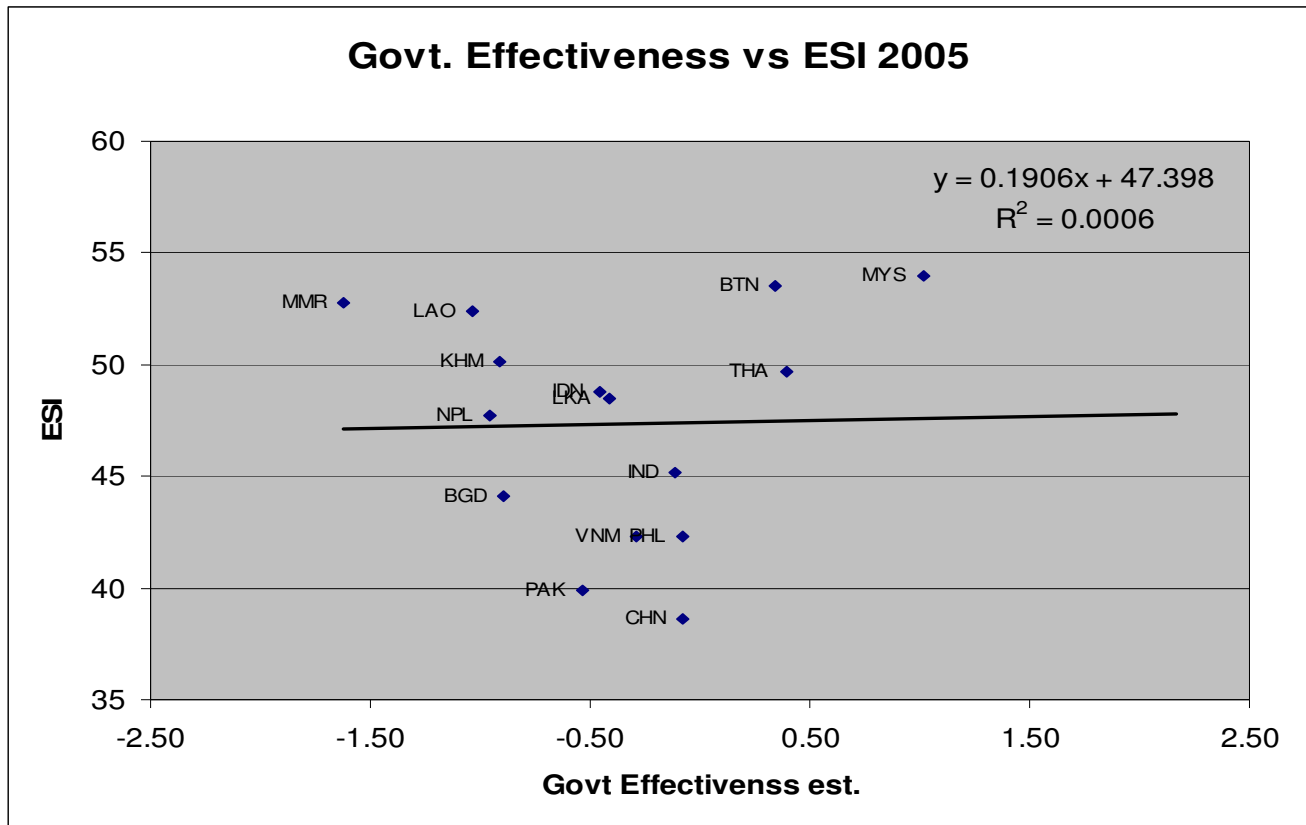


Figure 12: Government Effectiveness vs ESI

Figure 13 describes the relationship between 4th dimension of WGI, Regulatory Quality with ESI 2005 scores for selected countries. The highest scoring countries in regulatory quality like Malaysia (+0.52), Thailand (+0.41) and Bhutan (-0.13) have higher ESI scores. But Laos (-1.20) and Myanmar (-2.24) having lowest regulatory quality scores also well in environmental sustainability. While Bhutan (-0.13) and Sri Lanka (-0.21) having moderately good score in regulatory quality are performing well in environmental sustainability, Philippines (-0.05), India (-0.21) and China (-0.26) with similar scores have very low scores in ESI. Bangladesh (-0.95), Pakistan (-0.59) and Vietnam (-0.57) being on the lower side of regulatory quality are doing bad in environmental sustainability, but Nepal (-0.61) having similar score is doing better.

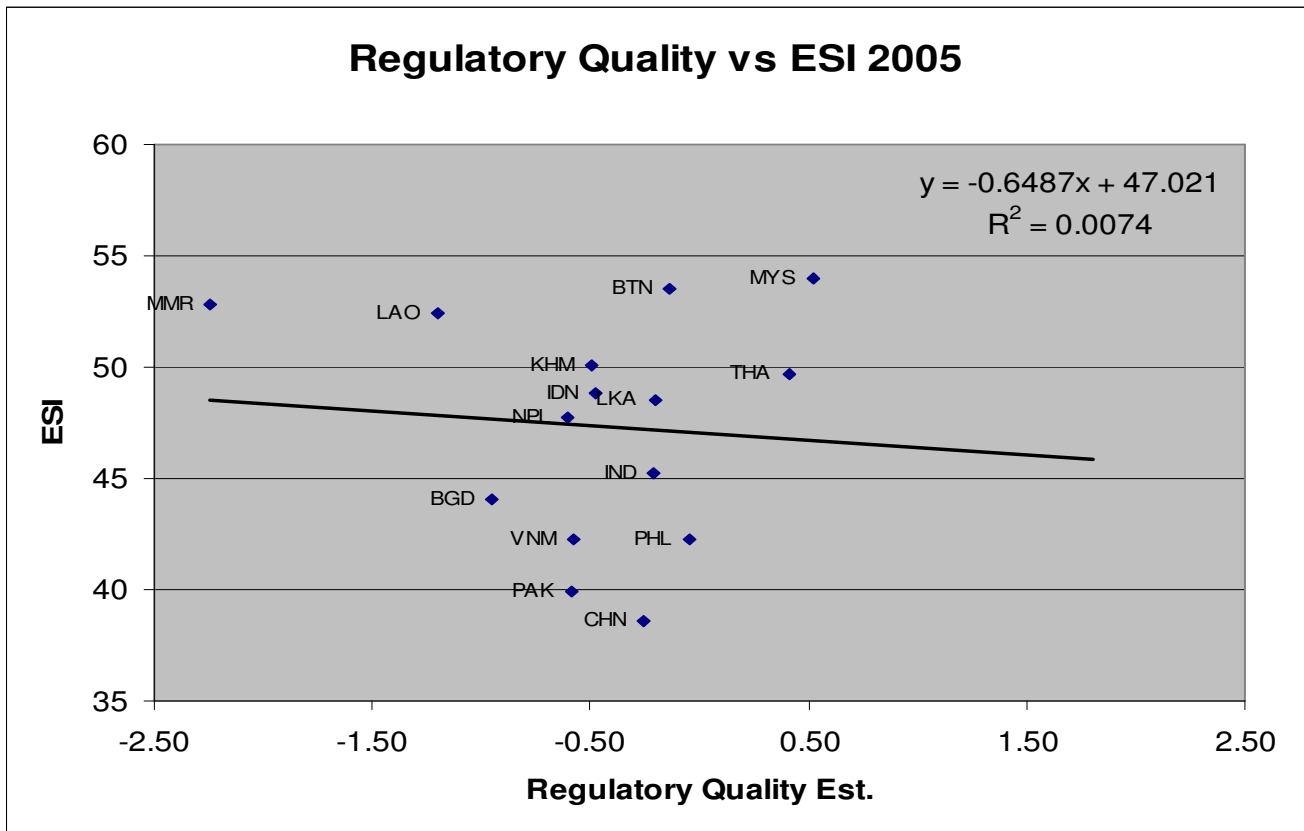


Figure 13: Regulatory Quality vs ESI

Relationship between the 5th dimension of WGI, rule of law with ESI is analyzed in Figure 14. From the analysis, we can conclude that rule of law does not have any relationship with environmental sustainability in selected countries. Bhutan (+0.58) and Malaysia (+0.56) highest scoring countries in rule of law exhibits higher ESI values. On the contrary, Myanmar (-1.60), Laos (-1.03) and Cambodia (-1.14) having lowest rule of law scores are also doing similar like Bhutan and Malaysia in environmental sustainability. Indonesia (-0.77), Nepal (-0.83) having rule of law scores on the lower side among selected countries while performing well in environmental sustainability, with similar or even better scores Bangladesh (-0.87), Pakistan (-0.87), Vietnam (-0.41), Philippines (-0.44) and China (-0.42) are the lowest scoring ESI countries.

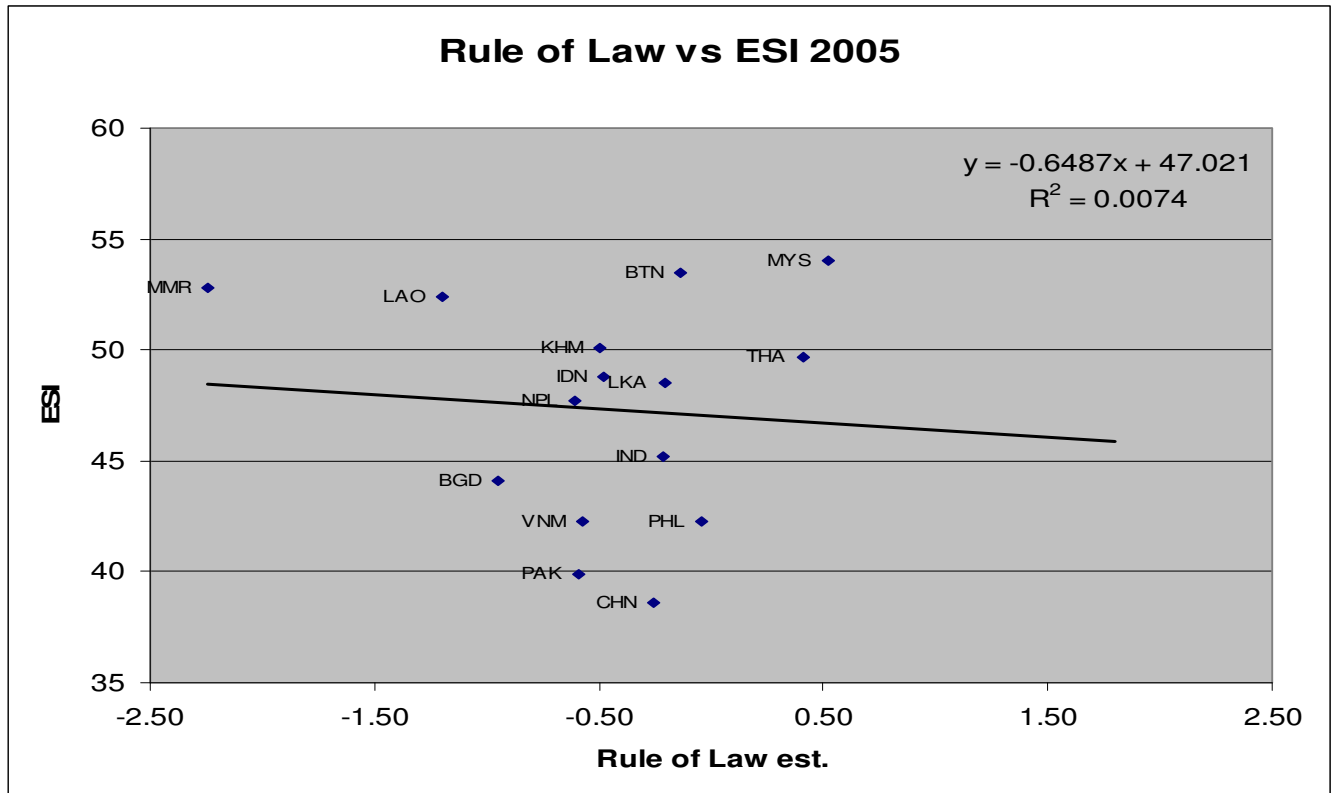


Figure 14: **Rule of Law vs ESI**

Figure 15 describes the relationship between the final dimensions of WGI, control of corruption with ESI and again we are unable to predict any relationship between the indicators. Bhutan (+0.87) and Malaysia (+0.26) highest scoring countries in controlling corruption exhibit higher ESI values. On the contrary, Myanmar (-1.59), Laos (-1.11) and Cambodia (-1.13) having lowest control of corruption scores are also doing similar like Bhutan and Malaysia in environmental sustainability based on ESI 2005 scores. Indonesia (-0.88), Nepal (-0.75) having rule of law scores on the lower side among selected countries while performing well in environmental sustainability, with similar scores Vietnam (-0.77), Philippines (-0.61) and China (-0.70) are the lowest scoring ESI countries. Bangladesh (-1.23), Pakistan (-0.99) having lower control of corruption scores are also lower in ESI scores. India (-0.31) while doing bad in terms of ESI, Sri Lanka (-0.26) and Thailand (-0.19) are reasonably well placed in environmental sustainability among the selected countries.

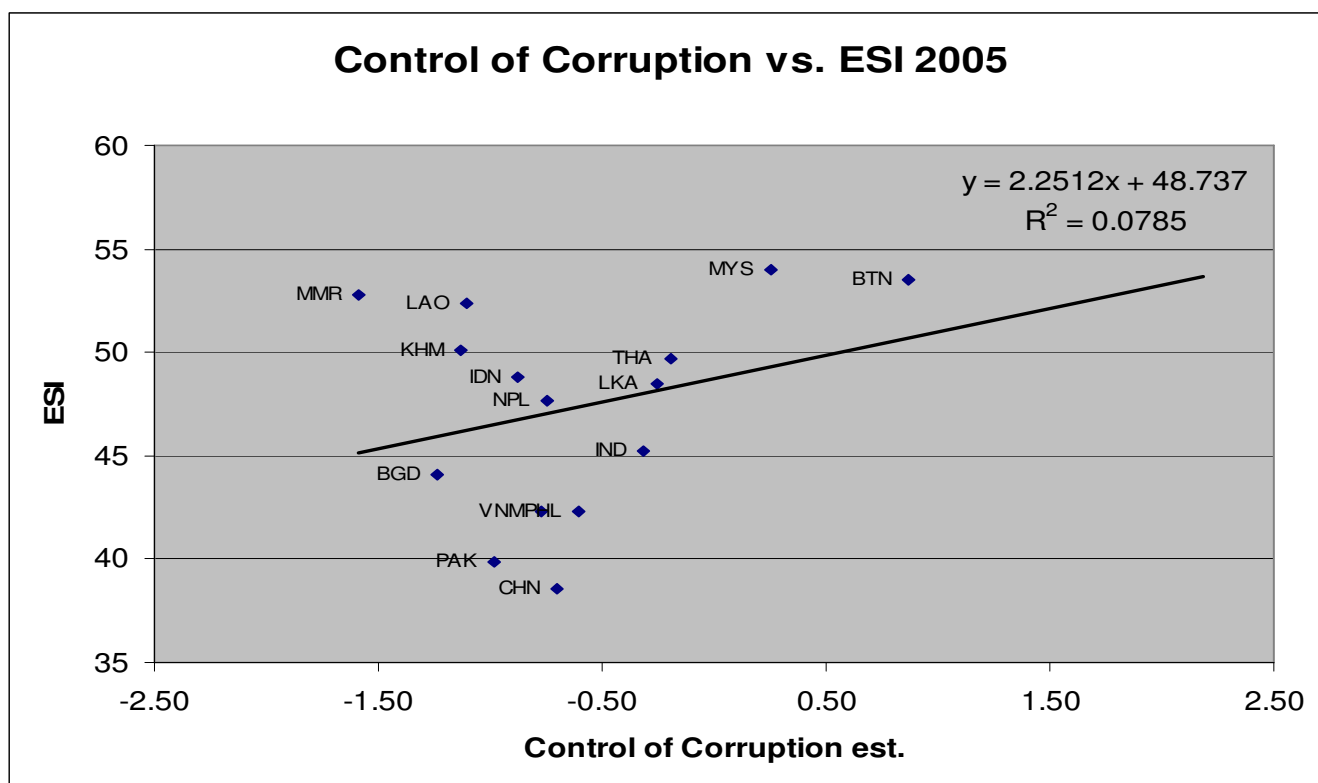


Figure 15: Control of Corruption vs ESI

In addition, to check the variability of ESI with other governance indicators, Freedom House indicator (civil liberty and political rights) was used. Table 6 represents the analyzed countries with their freedom house scores. In this indicator, countries are classified based on their aggregate score as free (score 1 to 2.5), partly free (score 3 to 5) and not free (score 5.5 to 7) (Freedom House 2005). Based on the 2005 score, among the selected countries India, Philippines and Thailand can be classified as free; Sri Lanka, Indonesia, Malaysia, Nepal and Bangladesh can be considered as partly free and Bhutan, Cambodia, China, Laos, Myanmar, Pakistan and Vietnam fall into not free category.

Table 6: Freedom House Score for Selected Countries in 2005

Country	PR	CL	Combined Score	Freedom Rating
Bangladesh	4	4	4	Partly Free
Bhutan	6	5	5.5	Not Free
Cambodia	6	5	5.5	Not Free
China	7	6	6.5	Not Free
India	2	3	2.5	Free
Indonesia	3	4	3.5	Partly Free
Laos	7	6	6.5	Not Free
Malaysia	4	4	4	Partly Free
Myanmar	7	7	7	Not Free
Nepal	5	5	5	Partly Free
Pakistan	6	5	5.5	Not Free
Philippines	2	3	2.5	Free

Sri Lanka	3	3	3	Partly Free
Thailand	2	3	2.5	Free
Vietnam	7	6	6.5	Not Free

Figure 16 describes the variability of score of freedom house. Analysis shows that there is no correlation between the aggregate Freedom House Score with ESI. Countries with very good freedom score (1 – 2.5) like India and Philippines are on the lower side ESI score. But Thailand having similar score is significantly higher in ESI score. On the other hand, countries which are categorized as “not free” by Freedom House score (5.5 – 7) like Myanmar, Laos, Bhutan, Cambodia have very high ESI scores among the selected countries. China, Pakistan and Vietnam fall into the same category of “not free” have significantly low ESI scores. Some of the “partly free” countries have very good ESI score (eg, Malaysia), but with similar score some countries (eg, Bangladesh) have very low ESI score.

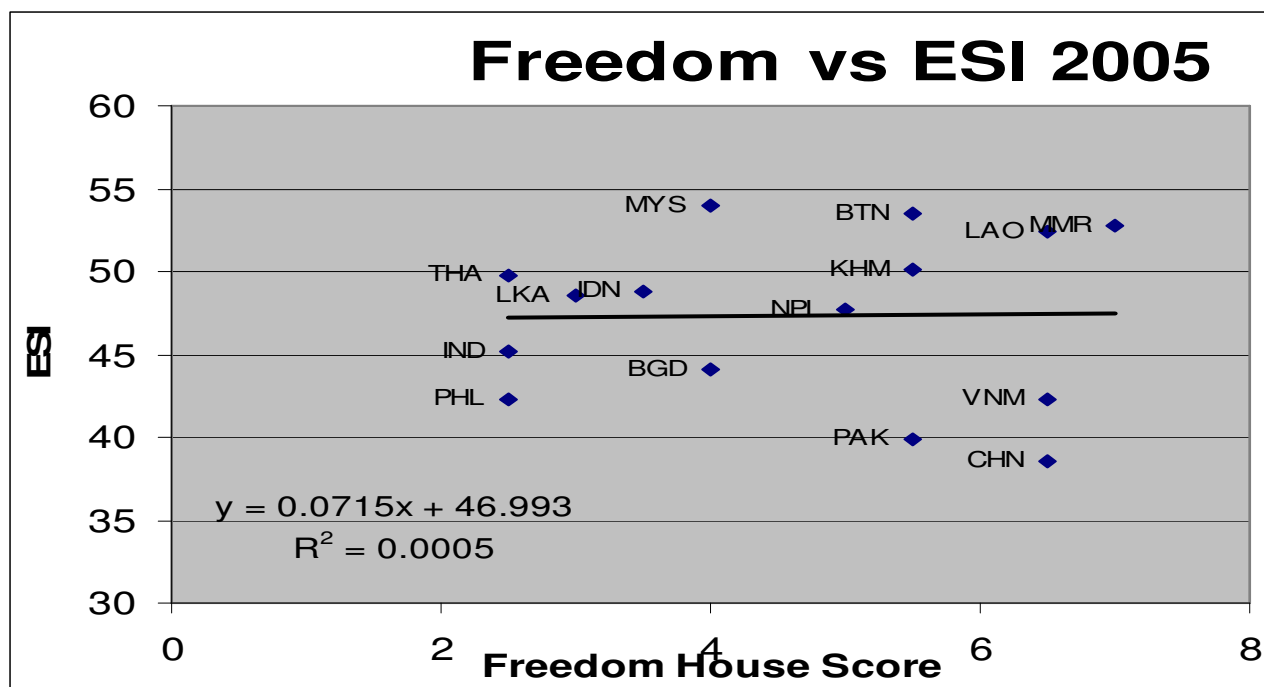


Figure 16: Freedom House Combined Score vs ESI

So based on the analysis it is evident that for the countries of South and Southeast Asia, there is no correlation between the six dimensions of governance with ESI. But the 2005 ESI report describes governance indicators as the most statistically significant variables (ESI 2005: P29). So to check how the six dimensions of governance used in WGI relates with ESI with other parts of the world, we selected the top ten ranked OECD countries (Australia, Austria, Canada, Finland, Iceland, Ireland, Norway, Sweden and Switzerland) in ESI ranking for 2005 and analyzed the ESI 2005 scores of the countries with all the dimensions of WGI. Figure 17 shows the relationship between Voice and Accountability with ESI 2005 score for the above OECD countries.

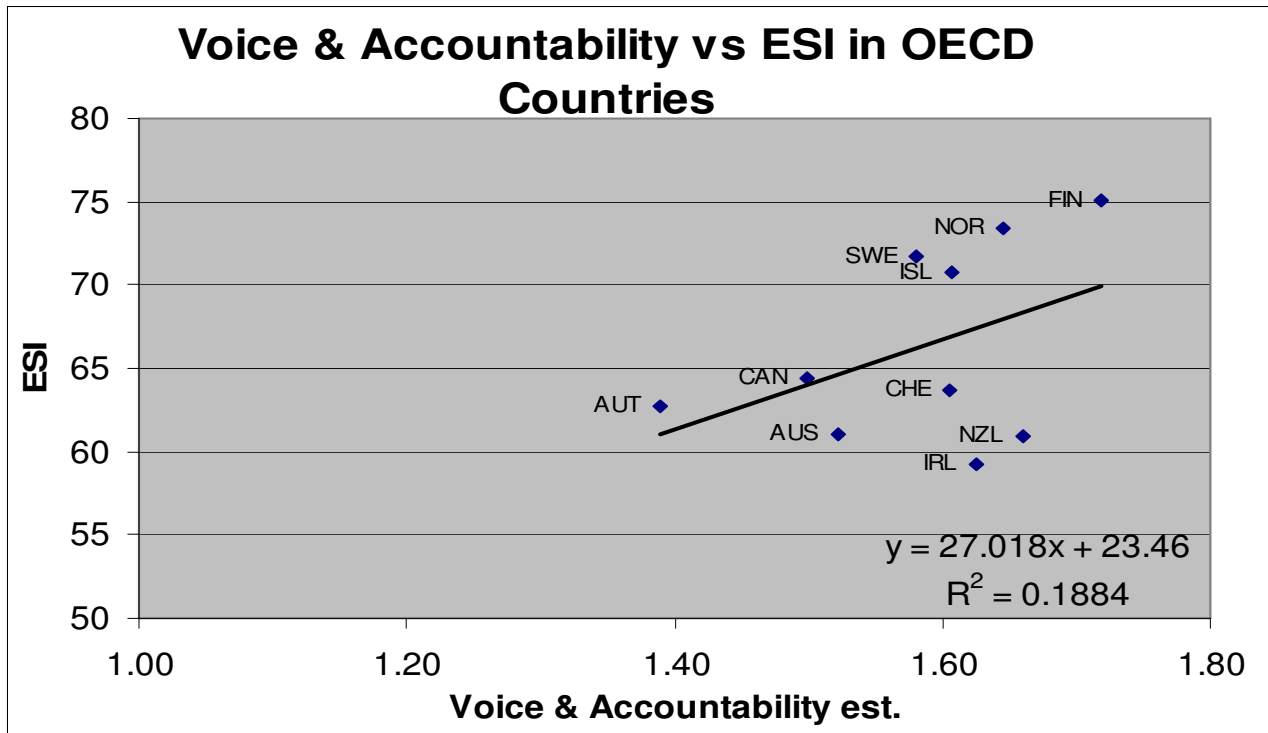


Figure 17: Voice and Accountability vs ESI Score for OECD Countries

From the figure it is clear that, even for these OECD countries with highest ESI score in 2005, there is no strong relationship between dimension of governance and ESI. The analysis shows only 18% of the data have a linear relationship. With higher voice and accountability values in countries like Finland, Norway and Sweden we have higher ESI values. On the other hand, with similar scores in voice and accountability countries like New Zealand, Ireland and Switzerland have lower ESI values. Similar analysis were conducted for the other five dimensions of WGI with ESI and in all the cases the relationship was found very weak (R^2 values ranging from 0.013 to 0.433).

Conclusion

It is evident from the above discussion that the degree of civil and political liberties in countries of Asia does not correlate with the desired level of government effectiveness or environmental sustainability. It's often the other way. Countries like Bhutan, Singapore and Malaysia, with lower scores in voice and accountability and other indicators of political freedom, show relatively higher scores in environmental sustainability. This is true to some extent even in the OECD countries. This might perhaps be explained by the following reasoning: rapidly growing pressures of economic growth on limited natural resources are taking its toll in some countries and this trend is likely to continue for quite some time. Instead of more democratic and political freedom indicators, it seems that in case of Asia, centralized, regulatory administration is working better for ensuring environmental sustainability. Therefore, no definitive conclusions can be drawn about the relationship between the governance process and environmental outcomes.

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