



**Capacity Development Workshop on
“ICT and E-Government in SIDS: Responding to the SAMOA Pathway”**

**UNPOG Research on
“The E-Government for Promoting Sustainable
Development in Small Island Developing States”**

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1. OVERVIEW OF RESEARCH

Background/Context
Research Design

1. Background/Context (1)

World' Attention to SIDS

- At Rio+20, Member States decided to call for a Third International Conference on Small Island Developing State (SIDS)
- The United Nations declared 2014 as the International Year of SIDS

UN's Commitment for SIDS

- 1994, Barbados Programme of Action
- 2005, Mauritius Strategy of Implementation
- 2014, Samoa Pathway

UNDESA's Key Issue

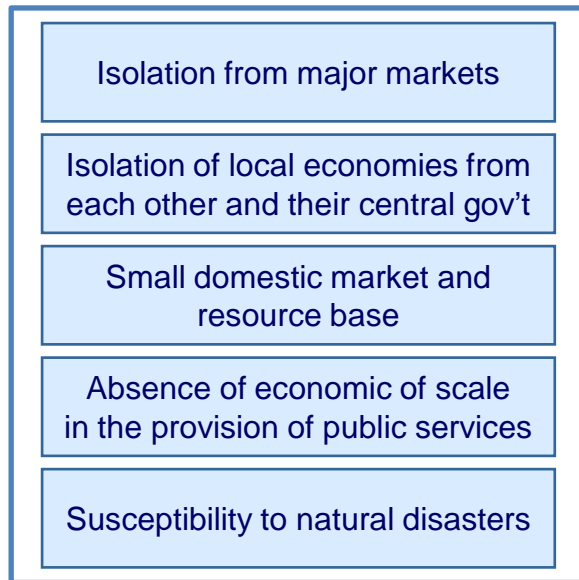
- SIDS Unit established in 1995 under UNDESA
- USG Mr. Wu appointed as Secretary General for 2014 Third International Conference on SIDS
- Analysis on SIDS In 2014 UN E-Government Survey



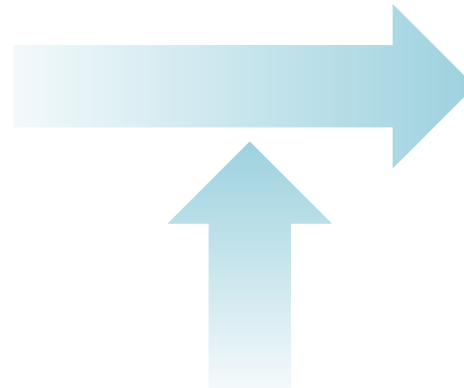
1. Background/Context (2)

Potential of E-Government to Address Multiple Challenges

Features of SIDS



Unfavorable conditions for sustainable development



E-Government & E-Government based Good Governance



2. Research Design (1)

Research Objectives

- To empirically examine effects of e-government on good governance and sustainable development in SIDS
- To identify key success factors which makes the differences in e-government development among SIDS
- To provide relevant policy recommendations on e-government development for sustainable development in SIDS

Sample

22 SIDS in the Pacific and AIMS regions with UN membership

** Bahrain is included as UN-OHRLLS indicates Bahrain as SIDS.*

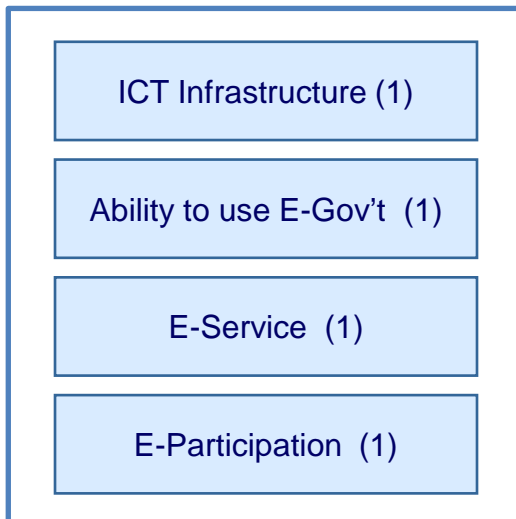
Research Methods

- Literature Review, Panel Interviews, Survey
- Statistical analysis and Comparative Analysis

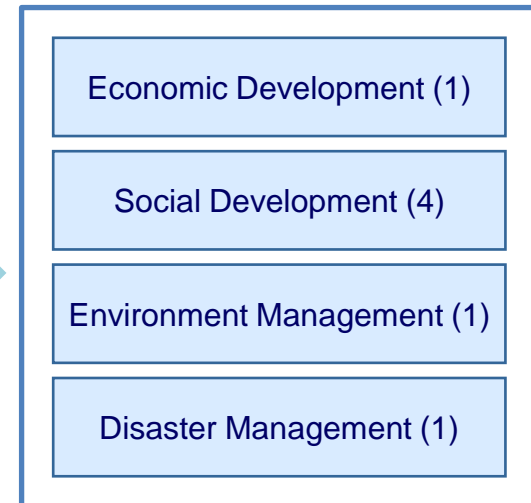
2. Research Design (2)

Research Framework

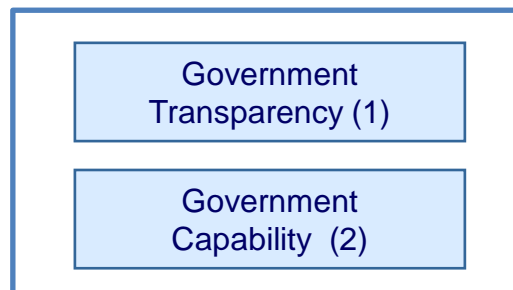
E-Government Development



Economic & Social Development Environment & Disaster Management

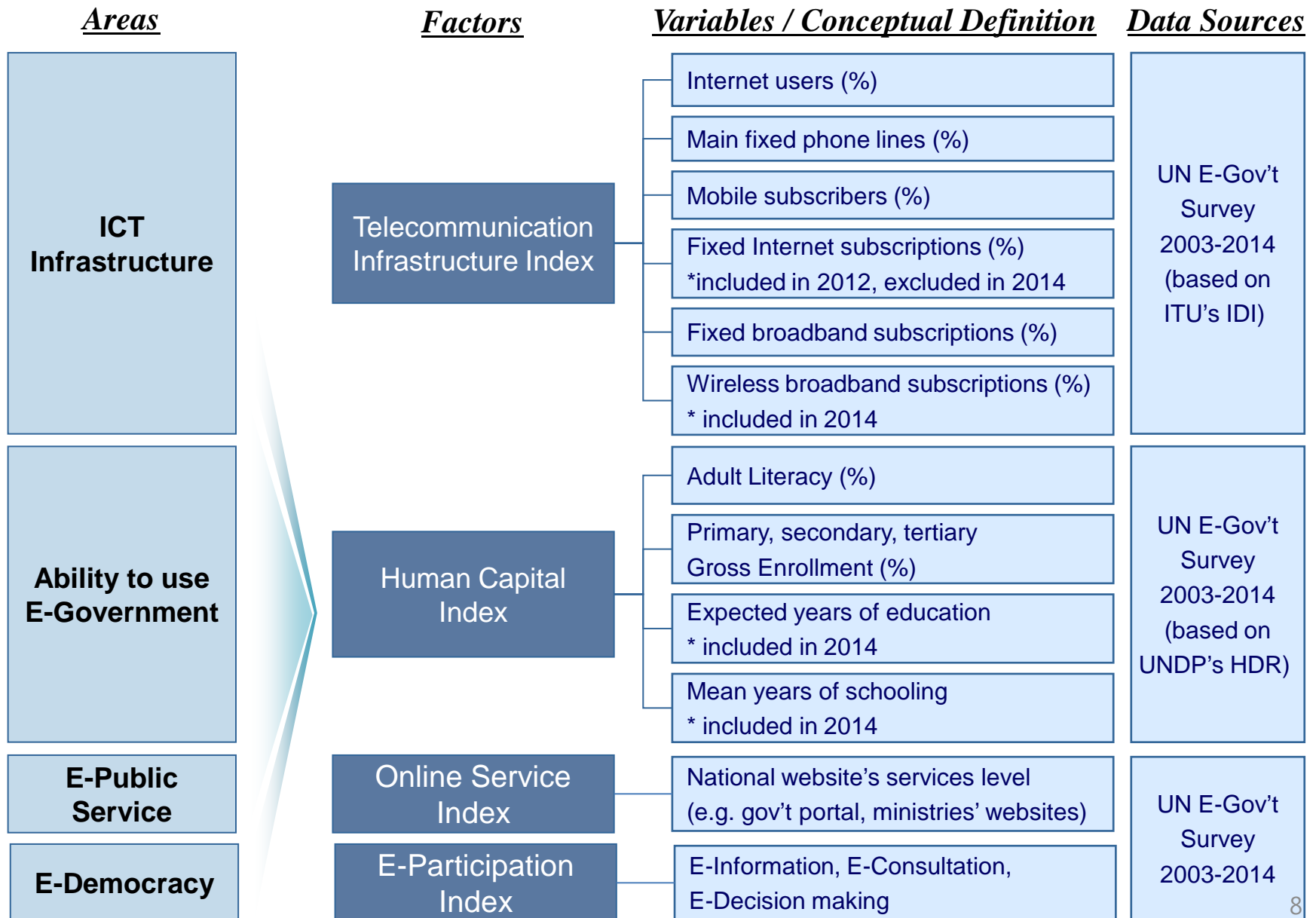


Good Governance

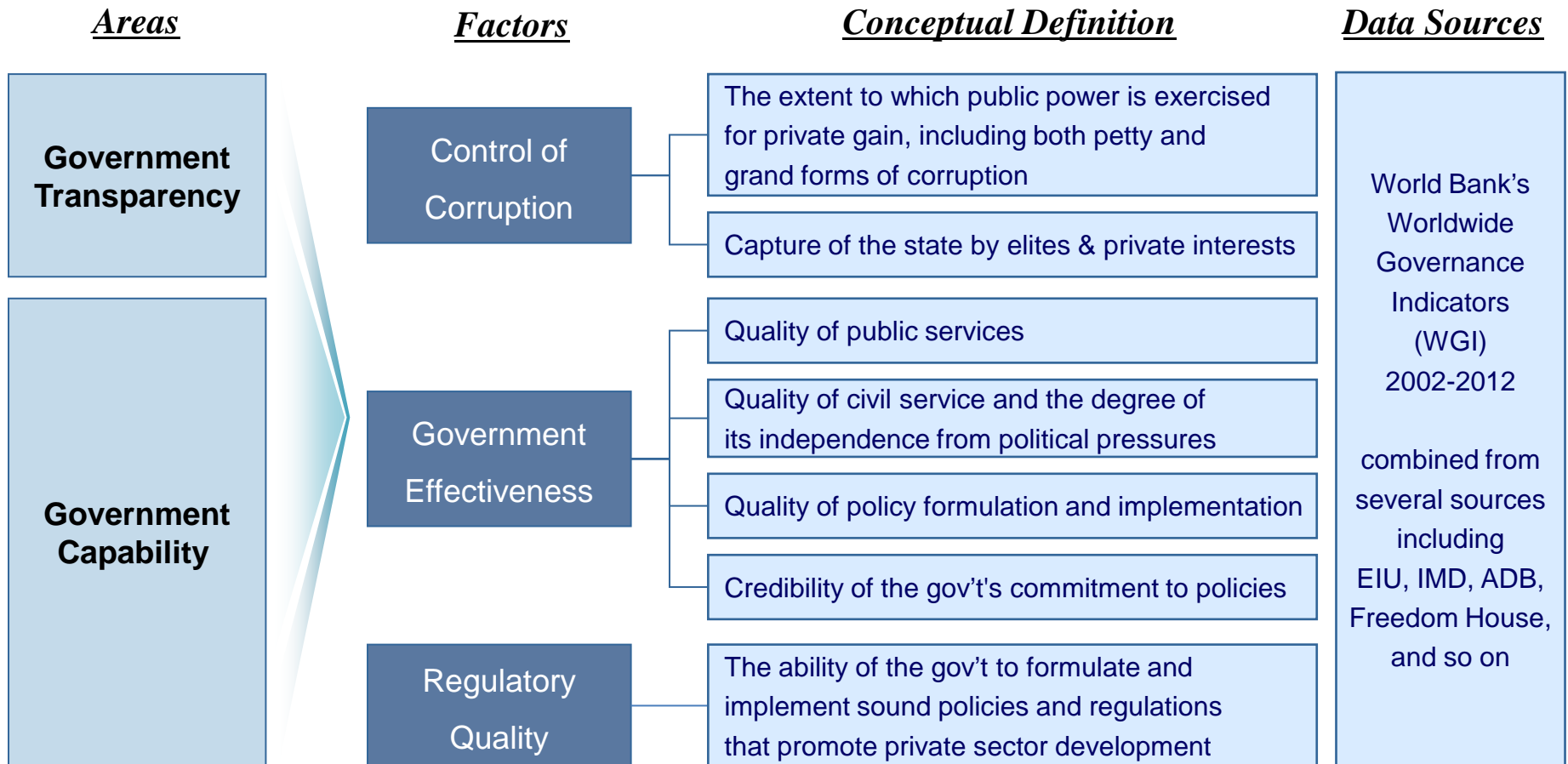


(): Number of Factors₇

Measures on E-Government Development



Measures on Good Governance



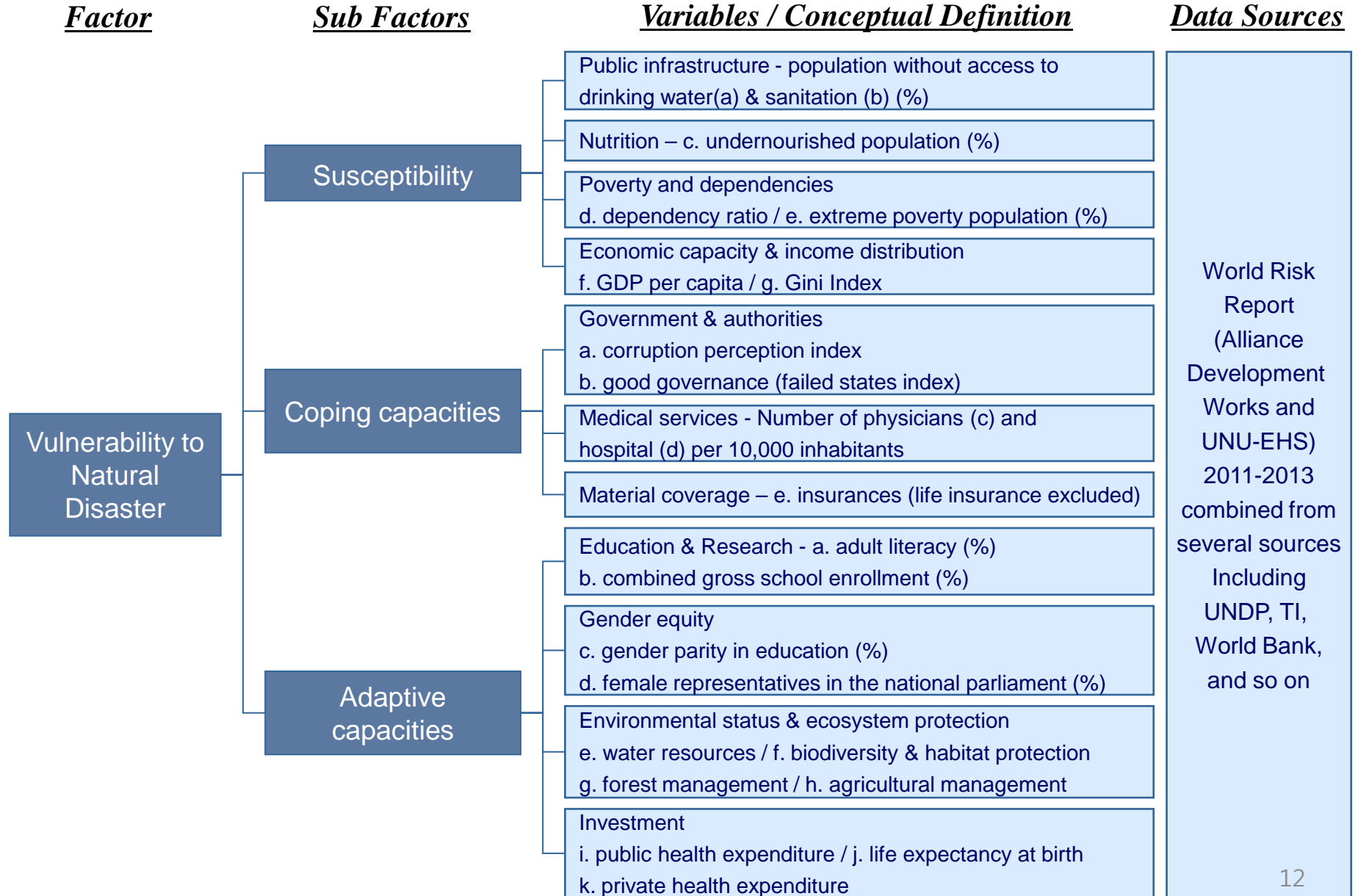
Measures on Economic & Social Development

<u>Areas</u>	<u>Factors</u>	<u>Variables / Conceptual Definition</u>	<u>Data Sources</u>
<div> Economic Development </div> <div> Social Development </div>	GDP per capita	GDP (constant 2005, USD) / population	World Bank 2001-2012
	Rule of Law	The extent to which agents have confidence in and abide by the rules of society	World Bank's Worldwide Governance Indicators (WGI) 2002-2012
		Quality of contract enforcement, property rights, the police, and the courts	
		Likelihood of crime and violence	
	Political Stability & Absence of Violence/Terrorism	Unlikelihood that the gov't will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence & terrorism	UNDP's Human Development Index (HDI) 01-12 for UFMR 05-13 for HI
	Under-five Mortality Rate	Under-five mortality (per 1,000 live births)	
	Health Index	Life expectancy at birth (expressed as an index using a minimum value of 20 years and a maximum value of 85 years)	

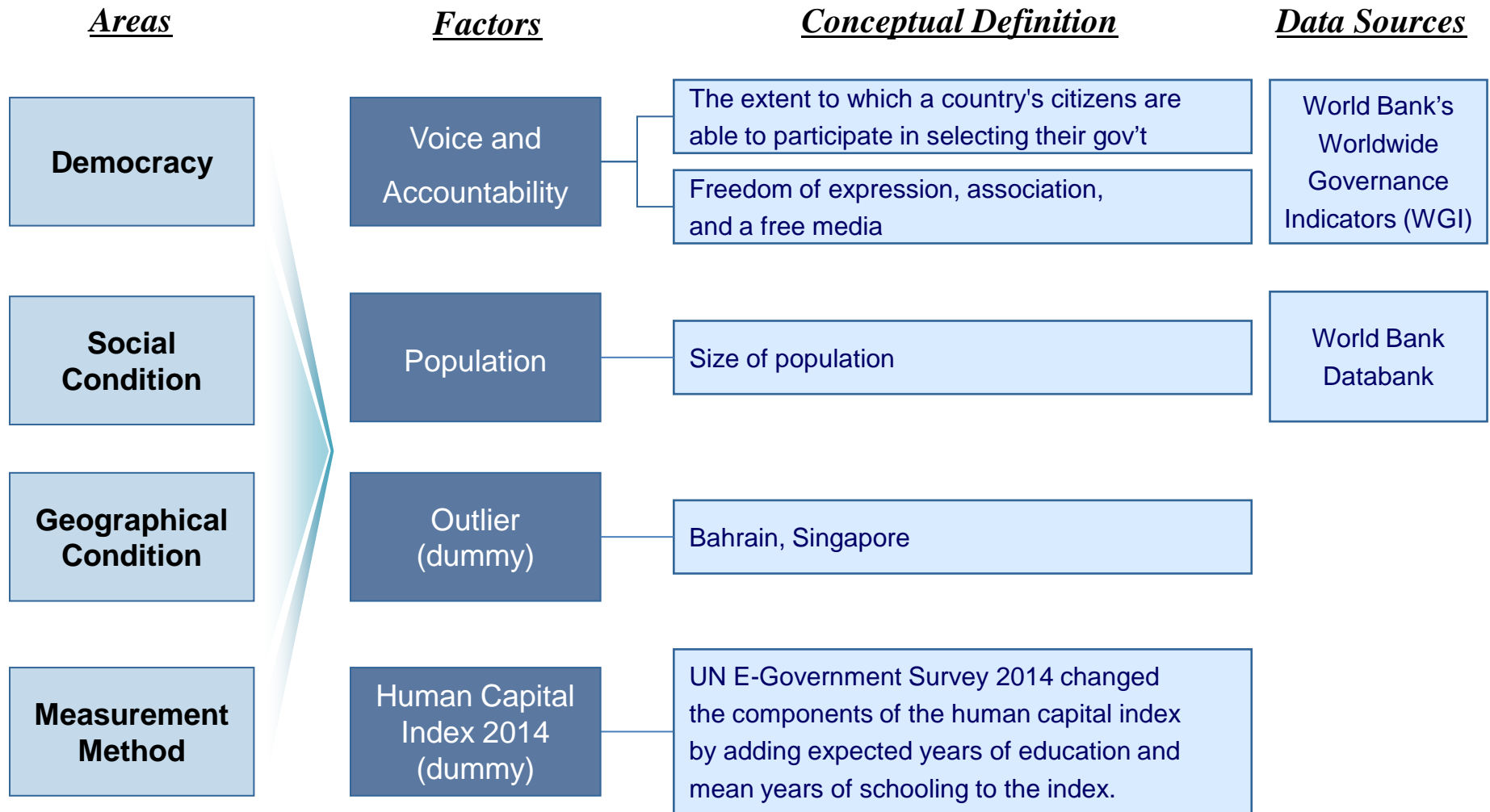
Measures on Environmental Management

<i><u>Factor</u></i>	<i><u>Sub Factors</u></i>	<i><u>Variables / Conceptual Definition</u></i>	<i><u>Data Sources</u></i>
Ecosystem Vitality	Water Resources	Wastewater Treatment Level	Environmental Performance Index (EPI) of Yale Univ. (YCELP) & Columbia Univ. (CIESIN) 2002-2012 combined from several sources Including WHO, UNICEF, World Bank, UNEP, IEA, FAO, and so on
	Agriculture	Agricultural Subsidies	
		Pesticide Regulation	
	Forests	Change in forest cover	
	Fisheries	Coastal Shelf Fishing Pressure	
		Fish Stocks	
	Biodiversity & Habitat	Terrestrial protected areas (national biome weights)	
		Terrestrial protected areas (global biome weights)	
		Marine Protected Areas	
		Critical Habitat Protection (%)	
	Climate & Energy	Trend in Carbon Intensity	
		Change of Trend in Carbon Intensity	
		Trend in CO2 Emissions per KWH	

Measures on Natural Disaster Management



Measures on Control Variables

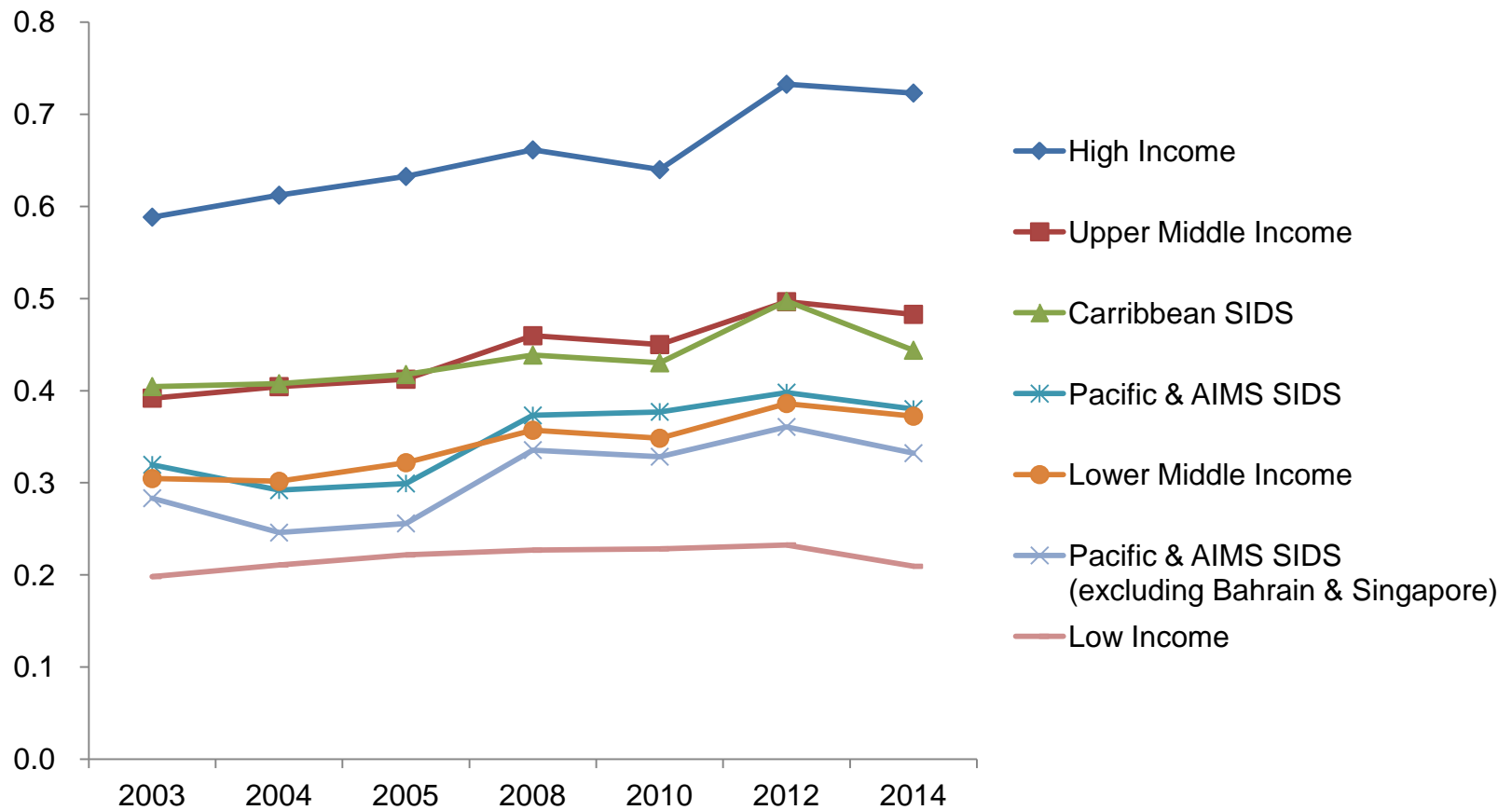


2. TRENDS AND CURRENT STATUS OF E-GOVERNMENT IN SIDS

Regional Trends of Pacific and AIMS
Current Status of Pacific and AIMS

1. Regional Trends of Pacific and AIMS

□ Regional Comparison of E-Government Development Index (EGDI)



Source: UN E-Government Survey 2003~2014

2. Current Status of Pacific and AIMS

□ Regional Comparison of EGDI Components and EPI

Group	HCI	TII	OSI	EPI
High Income	0.8343	0.6845	0.6503	0.6001
Upper Middle Income	0.7253	0.3522	0.3709	0.3824
Lower Middle Income	0.5787	0.2307	0.3076	0.3218
Low Income	0.3884	0.0876	0.1523	0.1815
LDC	0.3960	0.0929	0.1475	0.1720
World	0.6566	0.3650	0.3919	0.3947
SIDS	0.6654	0.3033	0.2520	0.2935
Pacific & AIMS SIDS	0.6410	0.2537	0.2452	0.2665
<i>Pacific & AIMS SIDS (excluding Bahrain & Singapore)</i>	0.6233	0.1999	0.1732	0.2069
Caribbean SIDS	0.6989	0.3714	0.2613	0.2500

Source: UN E-Government Survey 2014

3. RESEARCH ANALYSIS AND KEY FINDINGS

Regression Analysis
Comparative Analysis

1. Regression Analysis (1)

□ Effects of E-Government development on Good governance

Variable	Control of Corruption	Government Effectiveness	Regulatory Quality
HCI	0.380^{***}	0.196	-0.224
TII	1.304^{***}	2.424^{***}	1.574^{***}
OSI	0.255	0.710[*]	1.716^{***}
EPI(log)	0.000	0.002[*]	0.001
V&A×CEPI	0.327	0.619[*]	0.827^{**}
N	115	115	115

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

- TII is found to have significant impacts on all good governance indicators. HCI has a positive influence on government transparency while OSI has positive effects on government effectiveness and regulatory quality.

1. Regression Analysis (2)

□ Effects of Good Governance on Sustainable Development

Variable	Economic Development	Social Development				Environment Management	Disaster Management
	GDP per capita (log)	Rule of law	Political Stability & Absence of Violence/Terrorism	Under-five Mortality	Health index	Ecosystem vitality	Vulnerability to natural disaster
Government Capability	0.245***	0.676***	0.178***	-3.72*	0.040***	0.991*	-12.98***
Control of Corruption	0.127**	0.130**	0.455***	-5.62***	0.022***	-0.954	1.19
N	123	123	118	123	96	87	48

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

- Government capability is shown to affect all sustainable development indicators.
- Government transparency also shows significant causal relationships with economic and social development. However, it is not found to have any significant effect on the level of environment and disaster management.

1. Regression Analysis (3)

□ Effects of E-Government Development on Sustainable Development

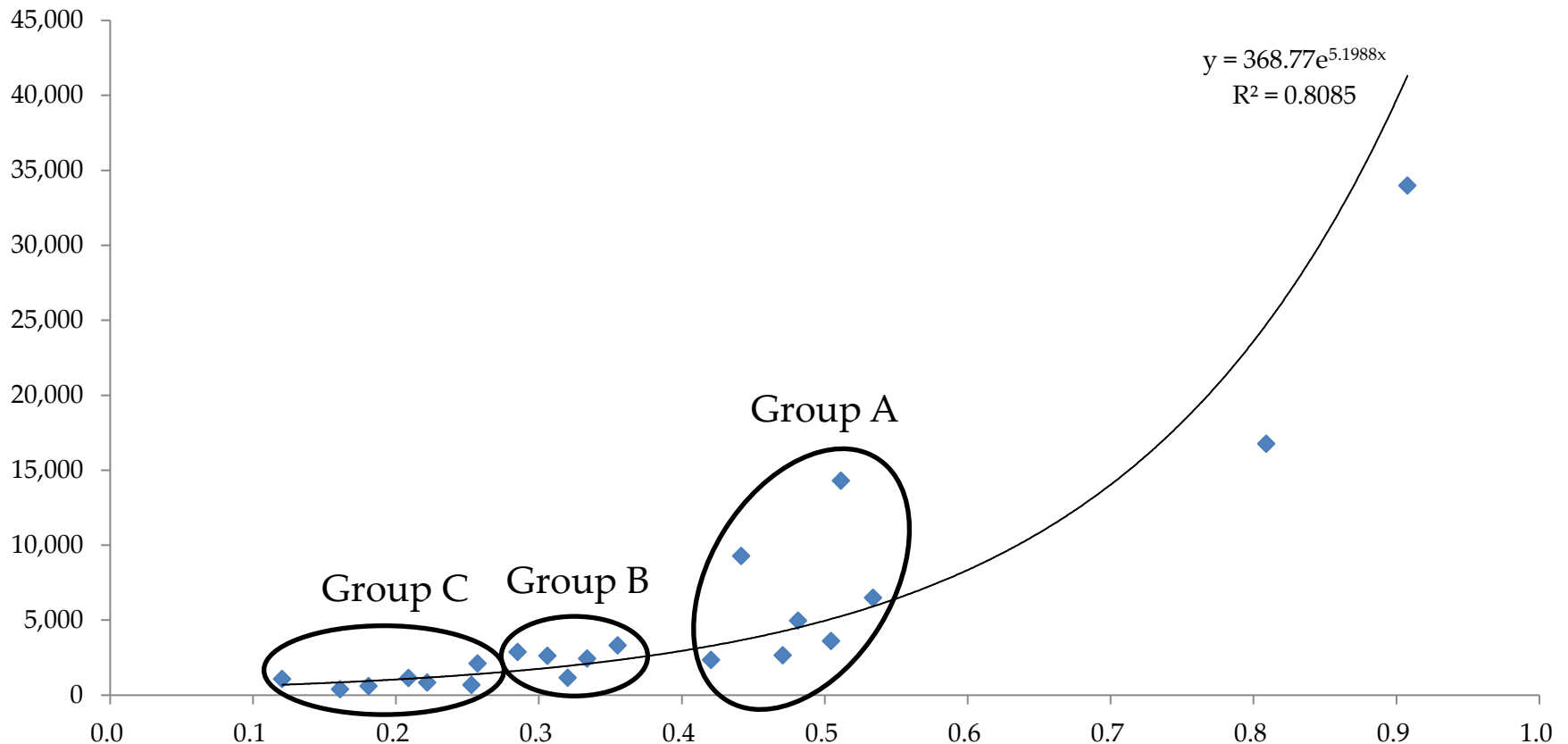
Variable	Economic Development	Social Development				Environment Management	Disaster Management
	GDP per capita (log)	Rule of law	Political Stability & Absence of Violence/Terrorism	Under-five mortality	Health index	Ecosystem vitality	Vulnerability to natural disaster
HCI	0.305*	0.442**	0.326	-16.98***	0.060***	1.925*	-23.46***
TII	2.971***	1.057***	0.304	-41.38***	0.157***	0.537	-41.52***
OSI	0.390	1.036***	0.851**	-14.60**	0.073**	1.026	-0.60
EPI(log)	0.002*	0.000	0.002	-0.025	0.000	0.006	0.003
V&A×CEPI	0.312	0.673***	1.313***	3.143	0.000	0.372	1.29
N	115	115	110	115	92	85	47

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

- Three components (HCI, TII, and OSI) of EGDI also significantly affect various indicators of sustainable development.

2. Comparative Analysis (1)

□ Scatter plot of EGDI and GDP per capita as of 2012



- This scatter plot shows positive correlation between GDP per capita and EGDI .

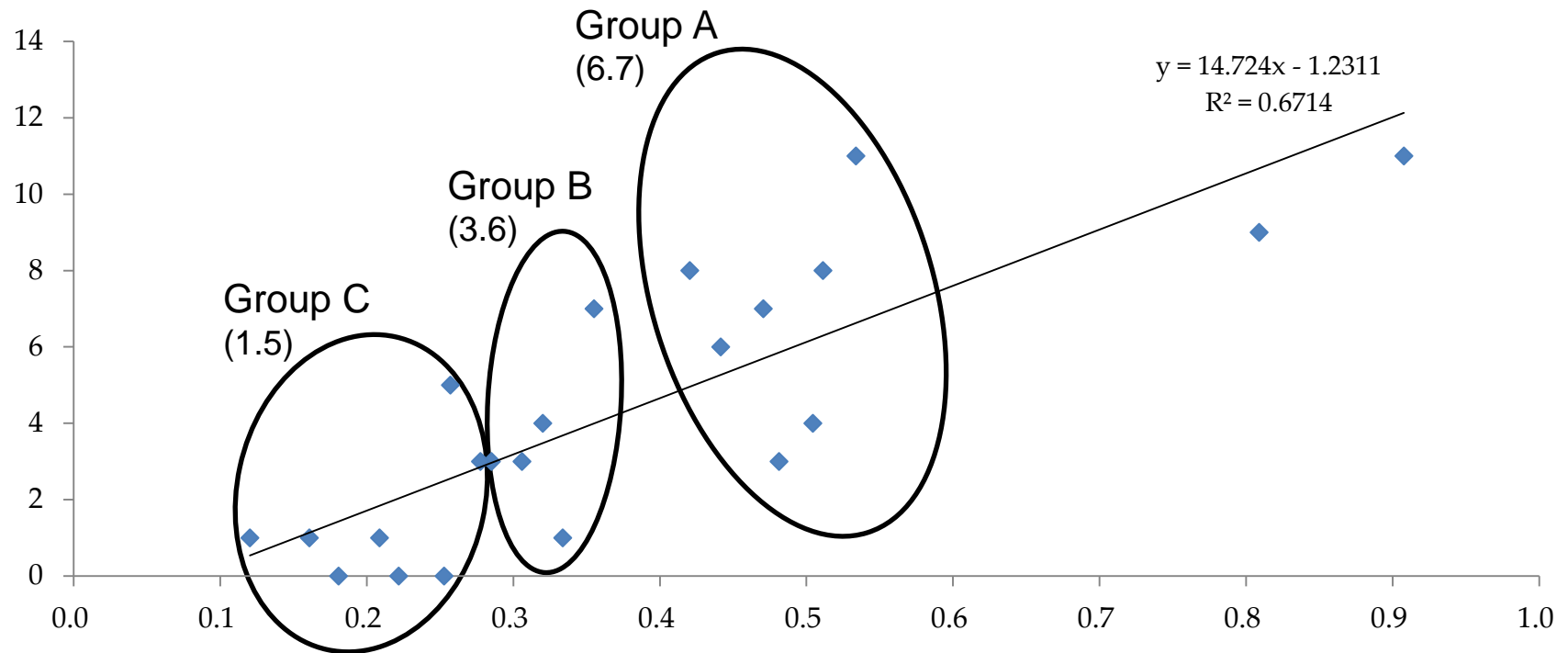
2. Comparative Analysis (2)

□ EGD and Performance in Good Governance and Sustainable Development

Group	Country	EGDI	CoC	Gov Eff	RQ	GDP_ capita	RoL	PS&AVT	UFM	HI	EV	Vul	No. of good Performance
Outlier	Singapore	0.9076	2.154	2.152	1.961	33,989	1.772	1.343	2.9	0.959	70.01	31.84	11
	Bahrain	0.8089	0.394	0.540	0.687	16,765	0.276	-1.132	9.6	0.871	30.90	42.37	9
Group A	Mauritius	0.5338	0.334	0.934	0.984	6,496	0.935	0.965	15.1	0.825	39.11	40.64	11
	Seychelles	0.5113	0.334	0.376	-0.310	14,303	-0.037	0.755	13.1	0.818	37.02	43.14	8
	Fiji	0.5044	-0.435	-0.899	-0.601	3,612	-0.801	-0.041	22.4	0.766	41.33	48.93	4
	Maldives	0.4813	-0.443	-0.160	-0.347	4,968	-0.500	-0.278	10.5	0.891			3
	Tonga	0.4706	-0.072	-0.194	-0.599	2,658	0.027	0.931	12.8	0.810	52.51	51.07	7
	Palau	0.4415	-0.284	-0.558	-1.010	9,281	0.901	1.061	20.8	0.806	29.82		6
	Samoa*	0.4204	0.153	0.090	-0.339	2,350	0.696	1.022	17.8	0.818		49.58	8
Group B	Cape Verde	0.3551	0.806	0.099	0.040	3,321	0.479	0.783	22.2	0.848	29.85	53.31	7
	Micronesia	0.3337	-0.109	-0.632	-0.984	2,443	-0.022	1.161	38.5	0.754			1
	Kiribati*	0.3201	0.004	-0.834	-1.360	1,160	0.111	1.325	59.9	0.752	58.73	58.48	4
	Tuvalu*	0.3059	-0.296	-0.687	-1.250	2,624	0.460	1.325	29.7	0.721			3
	Marshall Islands	0.2851	-0.142	-1.649	-1.015	2,879	0.077	1.061	37.9	0.809			3
Group C	Nauru	0.2776	0.047	-0.558	-1.202		0.694	1.061	37.1	0.920			4
	Vanuatu*	0.2571	0.446	-0.223	-0.767	2,112	0.244	1.181	17.9	0.794	38.39	57.23	5
	Timor-Leste*	0.2528	-0.979	-1.193	-1.024	682	-1.199	-0.270	56.7	0.731	35.74	63.61	0
	Sao Tome & Principe*	0.2218	-0.393	-0.717	-0.803	840	-0.808	0.020	53.2	0.713		57.71	0
	Solomon Islands*	0.2087	-0.444	-0.824	-1.071	1,145	-0.601	0.250	31.1	0.733	21.56	60.40	1
	Comoros*	0.1808	-0.725	-1.546	-1.420	606	-1.034	-0.387	77.6	0.629	20.72	58.56	0
	Guinea-Bissau*	0.1609	-1.225	-1.244	-1.239	397	-1.520	-0.926	129.1	0.528	39.52	66.58	1
	Papua New Guinea	0.1203	-1.037	-0.769	-0.522	1,076	-0.864	-0.643	63.0	0.653	41.17	63.77	1
Average		0.3800	-0.087	-0.386	-0.554	5,415	-0.032	0.480	35.4	0.780	39.09	52.95	4.4

2. Comparative Analysis (3)

- Scatter plot of EGDI and the number of good performances in good governance and sustainable development



- This scatter plot shows positive correlation between EGDI and good performances in good governance and sustainable development

2. Comparative Analysis (4)

□ What makes the differences of the three groups?

Criteria	Outliers	Group A	Group B & C	Gap (times)
Existence of national e-gov't strategy (1)	1	0.7	0.21	<u>3.3</u>
Existence of a coordinating organization for e-government (1)	1	0.6	0.25	2.4
Political commitment (1)	1	0.9	0.5	1.8
Legal framework (1)	1	0.5	0.17	<u>3.0</u>
Financial feasibility (1)	1	0.5	0.17	<u>3.0</u>
Linkage b/w e-gov't & gov't reform (1)	0.75	0.5	0.33	1.5
E-awareness policy (1)	0.94	0.35	0.13	2.6
Sum (7)	6.69	4.05	2.25	1.8

- Higher performers show higher scores across all the 7 key success factors of e-government development than those of middle/low performers.
- Bigger gaps between high and low performers lie in the existence of national e-government strategy, legal framework, and financial feasibility.

4. POLICY RECOMMENDATIONS

Policy Recommendations

1. POLICY RECOMMENDATIONS (1)

1. SIDS pursues e-government development in line with national development priorities

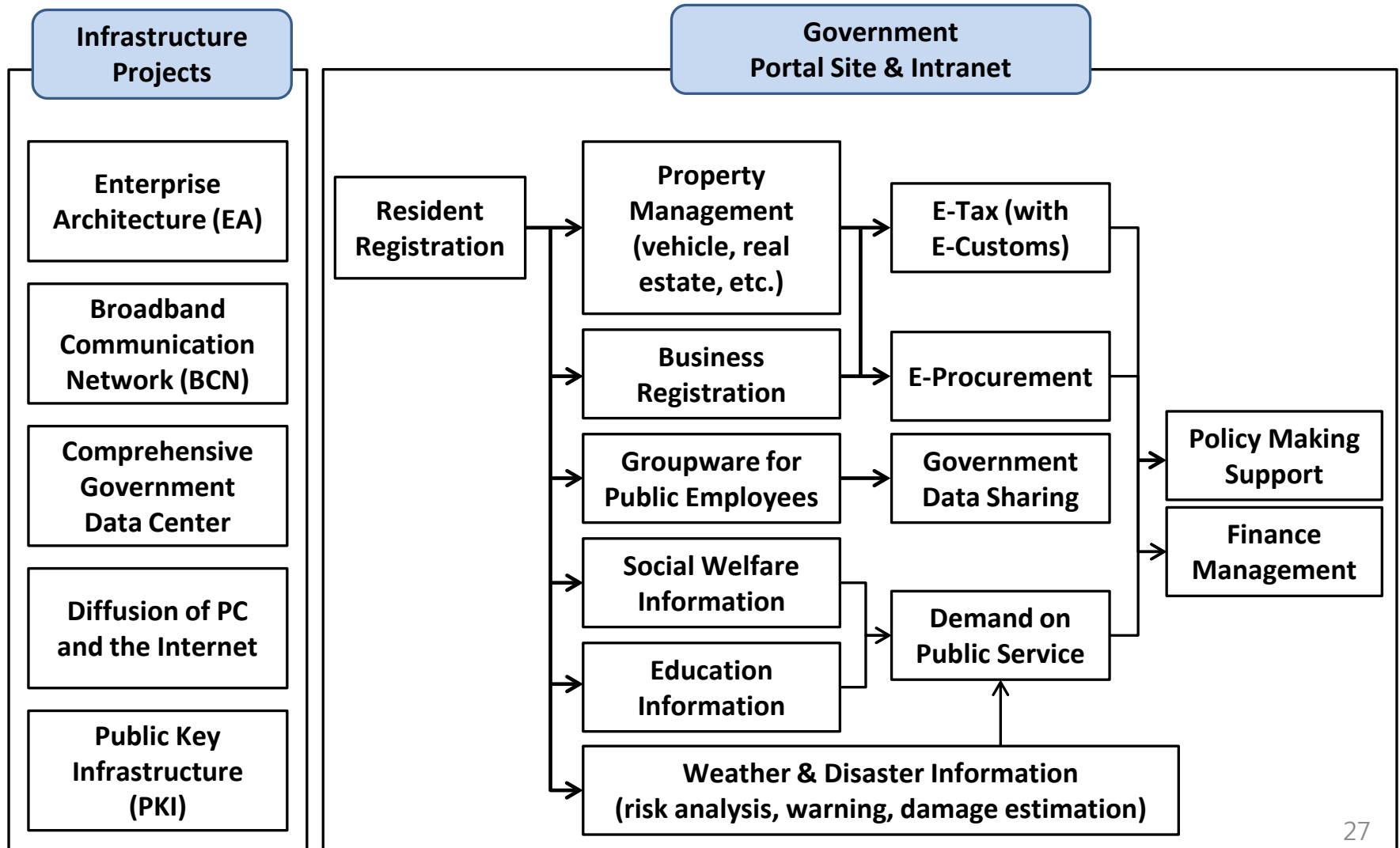
- E-government development has positive effects on better governance and sustainable development of SIDS.
- Advancement on e-government is not only a trait of developed countries but also serves as an enabler for sustainable development of developing countries.

2. SIDS focuses their efforts on the establishment of ICT/e-government infrastructures first.

- ICT infrastructures have significantly positive effects on good governance and sustainable development of SIDS.
- However, the current status of ICT infrastructure development in Pacific & AIMS SIDS is much behind of the average of the world.

1. POLICY RECOMMENDATIONS (2)

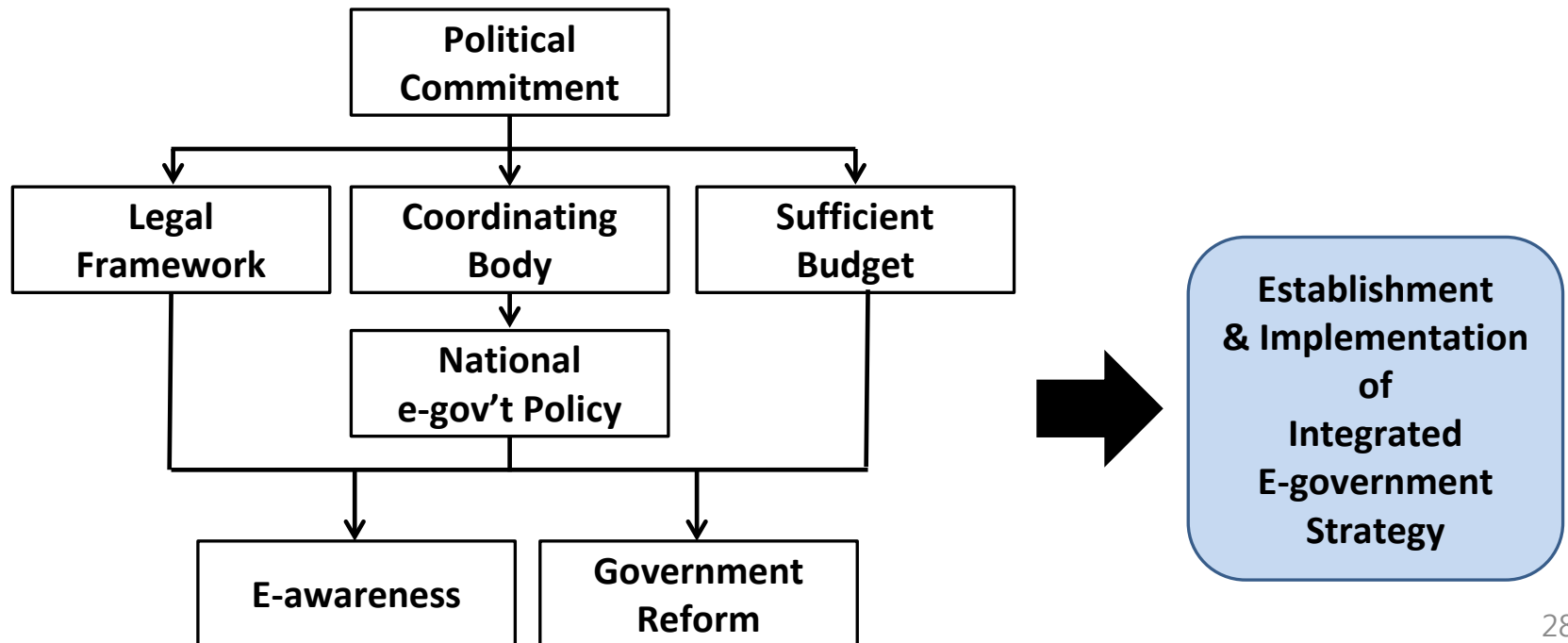
E-Government System: Infrastructure and Online Services



1. POLICY RECOMMENDATIONS (3)

3. SIDS develops a integrated and comprehensive e-government development strategy, incorporating the 7 key success factors.

- The 7 key success factors makes the differences in e-government development among SIDS.
- High performers in terms of good governance and sustainable development show higher scores on all the 7 key success factors of e-government development.



1. POLICY RECOMMENDATIONS (4)

4. SIDS strengthens international partnership and cooperation.

- The differences between high and low performing SIDS are noticeably observed, especially, in terms of the status of national e-government strategy, legal framework, and financial feasibility.
- Main reasons include lack of experts and experiences in establishing a comprehensive strategy, and lack of financial resources, which may not be in control of SIDS themselves
- The expansion of existing partnership and the launch of new partnership with various international organizations, regional development banks, and individual developed countries to mobilise financial and human resources for e-government development
- The establishment of SIDS development platform for e-government to promote exchange of knowledge and experiences, share best practices, and also better coordinate allocation of resources.

5. Outcome of 2014 SIDS Conference and Way Forward

**Outcome of 2014 SIDS Conference
SAMOA Pathway and ICT/E-Government
UNPOG's Future Plan**

1. OUTCOME OF 2014 SIDS CONFERENCE (1)

Adoption of the Outcome Document: *SIDS Accelerated Modalities of Action [S.A.M.O.A.] Pathway*



- Calling for the **international community's commitment to and partnership** with SIDS.
- Capturing a broad range of **challenges facing SIDS**, with an emphasis on the urgent need for addressing SIDS social, economic and environmental vulnerabilities, in particular the impact of climate change.
- Setting forth the **priorities of SIDS and the commitments to specific actions**, which expects to be reflected in the Post-2015 Development Agenda.
- Recognising the importance of **financing** from all sources for advancing sustainable development in SIDS.

1. OUTCOME OF 2014 SIDS CONFERENCE (2)

Genuine and Durable Partnerships

- **Registration of 297 partnerships** between governments, businesses and civil society organizations from all over the world to support SIDS.
- **Launch of some 100 partnership** during the Conference
- Total value of these commitments to over **USD \$1.9 billion**
- 166 states and governments, 85 United Nations entities/inter-governmental organizations, and nearly 1,200 major groups and other stakeholders.
- Areas of sustainable economic development, climate change and disaster risk management, social development, sustainable energy, ocean health, and water and sanitation, food security and waste management.



2. SAMOA PATHWAY AND ICT/E-Government

Strengthening ICT Infrastructure

- Support the efforts of SIDS to increase connectivity and the use of ICT through improved infrastructure, training and national legislation, as well as public and private sector involvement.
→ **Assist SIDS to enhance their capacity for formulating and implementing national e-government policy and strategies.**



Establishing Knowledge Platform

- Support the efforts of SIDS to establish national and regional ICT platforms and information dissemination hubs in SIDS to facilitate information exchange and cooperation, building on existing platforms
→ **Assist SIDS to set up a regional knowledge platform for strengthening international cooperation and partnership, and better coordinating resources in the area of e-government**



3. UNPOG'S FUTURE PLAN



1. Expand the country coverage of the Research to the Caribbean region in cooperation with eGB/DPADM and CARICAD.
2. Conduct a research, applying the same methodological framework, on other groups of countries such as landlocked developing countries (LLCs) and least developed countries (LDCs) with unique challenges and vulnerabilities in achieving sustainable development.
3. Assist SIDS to enhance their e-government capacity for promoting sustainable development by providing customised technical assistance and training programmes.



UN Public Administration Programme

Division for Public Administration and Development Management (DPADM)
UN Department of Economic and Social Affairs (UNDESA)



THANK YOU!

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