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**INEQUALITY, POVERTY AND HUNGER IN
DEVELOPING COUNTRIES: SUSTAINABILITY
IMPLICATIONS**

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1.0 INTRODUCTION

Indisputably, people are the real wealth of a nation. Thus, after the millennium development goals were adopted in the year 2000, dozens of developing country planning ministries, hundreds of international agencies as well as thousands of civil society organizations rallied behind them.

However, the world economy continues to emerge slowly from the most serious economic crisis of the post world war II period. That is one that has deeply transformed the global economy and highlighted the increasingly important role that emerging markets as well as developing economies play in the global economy. Yet, the past two decades have seen substantial progress in many aspects of human development.

Notably, some people are healthier, live longer, more educated and have more access to goods and services. Perhaps, there have also been progresses in expanding people's power to select leaders, influence public decisions and share knowledge (*ceteris paribus*).

Regrettably, these years have seen increasing inequality (both within and across countries) as well as production and consumption patterns that have increasingly been revealed as unsustainable. Although progress has varied, people in some African regions have actually experienced periods (especially in health) of regress. Again, aggregate progress in income has varied without convergence. In fact, average rich countries have grown faster than the poor ones over the past four decades. Notably, the divide between developed and developing countries persists. That is, a small subset of countries has remained at the top of the world while the rest of the countries remained poor (United Nations, 2010). However, surviving is just one part of leading a long and healthy life. Yet, being well nourished is another. Thus, those who survive need to be sufficiently well nourished to live decently and fulfill their life plans. Indeed, going to bed hungry (or falling asleep due to lack of energy) is one of the most tangible deprivations that people can face.

Here, nutrition is an aspect of health where income matters. Therefore, hungry people who have more money are likely to spend it on food. However, more income does not always guarantee proper nutrition while people who are not poor can still go hungry. Clearly, differences persists between number of poor people (estimated by dollar a day thresholds) and numbers of hungry people. Perhaps, the observed variations reflect influences other than income on the nutritional outcomes of family members such as maternal health, and education as well as feeding and hygiene practices in the home. Again, inadequate nutrition affects the way people (particularly children) acquire knowledge and participate in society. It also hampers the ability to work and be productive which limits the ability to earn the income needed to lead a decent life. Thus, the irreversibility of some health consequences of malnutrition (blindness from vitamin A deficiency, physical stunting from protein shortages) reinforces the urgency of eradicating hunger. Unfortunately, hunger remains a many-headed monster, behemoth and a stubborn one. Paradoxically, while many millions of people have too little to eat, millions eat too much. Therefore, income has many shortcomings as a summary measure of development. Among its flaws is the neglect of inequality in distribution as well as the unsustainability of production patterns.

Nevertheless, people living in poverty, have always expressed how powerless they felt because their jobs and livelihood were precarious. In fact, they fear getting sick and lack of safety. Again, they experience insecurity, corruption and violence in their homes. They are often excluded and abused by society's institutions. On the other hand, there are no transparent, open and responsive government that recognizes their dignity and human rights.

Notably, the urban poor wants jobs that is better than selling small items on the street or picking through rubbish dumps. And (like people everywhere) they want security so that their families can safely go about their lives. Similarly, young people often asked for education beyond primary schooling. That is, not just formal learning but life skills and vocational training to prepare for jobs. Hey also want access to decent jobs as well as

opportunities to lift themselves out of poverty. For businesses, it is not just providing good and decent jobs and growth, but delivering essential services as well as helping billions of people access clean sustainable energy with climate change adaptation.

Critically, we identify the degrees of hunger, vulnerability and deprivation that shape the daily lives of millions of people in the developing countries. At the same time, we are shocked by the level of inequality in these economies (both among and within countries). Specifically, of all the goods and services consumed globally (per year); the one billion people living in extreme poverty account for one percent. In contrast, the richest one billion people consume about seventy percent (United Nation, 2013).

Indeed, this is a world of challenges. But these challenges can equally present opportunities, if they kindle a new spirit of solidarity, mutual respect and mutual benefit (based on our common humanity and RIO principles). Thus, with the increasing pace at which domestic markets are becoming integrated into the global economy, the debate on income disparities around the developing countries has intensified. Here, an interesting side-effect of globalization has been to change the benchmark against which people measure their own well-being. In other words, increased international trade flows, greater exposure to international travel as well as improved and cheaper communication have made it easier for prosperity assessment. Clearly, these phenomena are giving more relevance to the concept of global income distribution (Bussolo et.al, 2008; Milanovic, 2006). Yet, the common understanding is that the recent globalization process has exacerbated inequalities between rich and poor countries as well as between rich and poor individuals within countries.

Unlike the previous studies on income distribution, the paper proposes the adoption of analytical framework called Global Income Distribution Dynamics (GIDD). Basically, the GIDD generates a counterfactual regional income distribution by taking into account the expected changes in the age and education structure of the population; worker migration from farming to non-farming activities; changes in skilled-to-unskilled and farming-to-non-farming wage premiums; as well as different income growth rates across

countries (Bussolo, et.al, 2010). Essentially, GIDD based analysis allows us to understand how changes in global income distribution are accounted for by changes in growth rates across countries as well as changes in income differences within countries. This study therefore represents a big leap in our understanding of regional income inequality (poverty, hunger and sustainability) as it relates Africa, Pacific and Caribbean (ACP) countries.

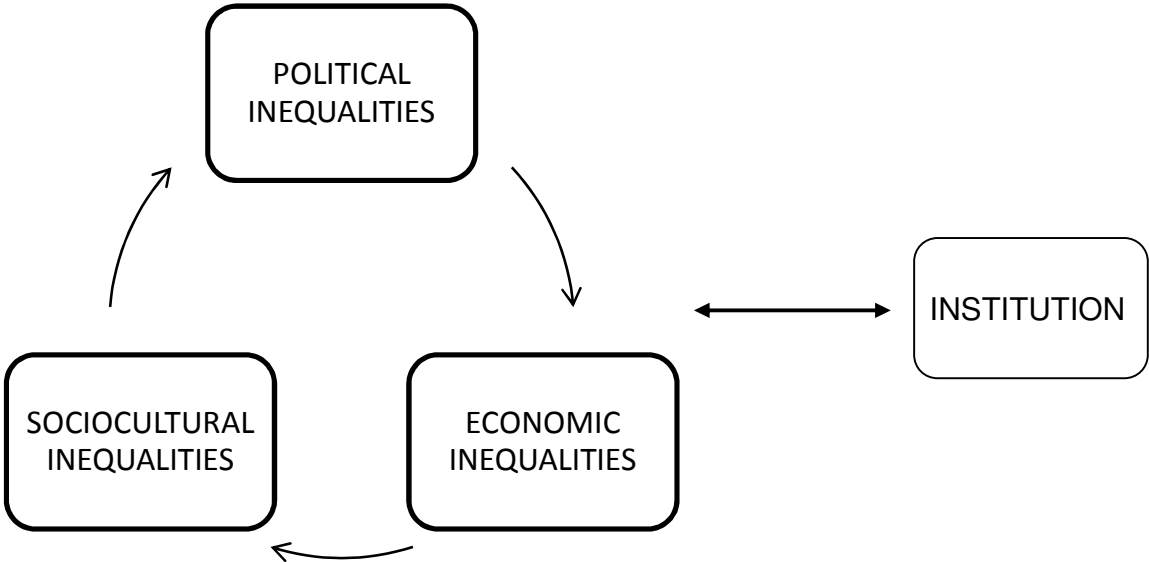
The rest of the paper is divided into seven sections. Section two presents the overview of ACP regional inequality. Regional poverty analysis is the theme of section three while section four identifies the regional hunger status of ACP countries. Section five looks at productive sustainability concept while regional framework analysis is the subject of section six. Resilience policy strategies are recommended in section seven while section eight concludes the paper.

2.0 REGIONAL INEQUALITY: ACP EXPERIENCE

In contrast to the views of other professionals, economists link equity to questions of distribution. Yet, the common denominator of these many different views is that equity relates to fairness whether (locally in families and communities) or globally across nations. Regrettably, political systems do not assign equal weights to everyone's preferences. That is, policies and institutions do not arise from a benign social planner who aims to maximize the present value of social welfare. In fact, these are the outcomes of political economy processes in which different groups seek to protect their own interests. Here, some groups have more power than others while their views prevail. However, when the interests of dominant groups are aligned with broader collective goals, these decisions are for common good. And when they are not, the outcomes need be neither fair nor efficient.

Thus, the interaction of political, economic and socio-cultural inequalities shapes the institutions and rules in all societies. Notably, the way these institutions function affects people's opportunities and their ability to invest and prosper. As shown in figure 2.1, unequal economic opportunities lead to unequal outcomes and reinforce unequal political power (World Bank, 2006). Again, unequal power shapes institutions and policies that tend to foster the persistence of the initial conditions. Similarly, the unequal distribution of power between the rich and the poor (between dominant and subordinate group) helps the rich maintain control over resources. In fact, poor individuals in geographically isolated regions as well as racial and ethnic minorities also have less political power (and voice) in many countries. Unfortunately, this affects their ability to propose and implement policies that would reduce their disadvantages (even if such policies might be growth-enhancing for the country). Here, the correlations between the unequal distribution of assets, opportunities and political power give rise to a circular flow of mutually reinforcing patterns of inequality. Unfortunately, such a flow and its associated feedback loop help inequalities persist over long periods (even if they are inefficient and deemed unfair by a majority of the population).

FIG 2.1 INEQUALITIES INTERACTION SCHEME: POLITICAL, ECONOMIC AND SOCIO CULTURAL.



Clearly, economic and political inequalities are particularly embedded in unequal social and cultural institutions. In other words, the social networks that the poor have access to are substantially different from those that the rich can tap into. In contrast, the rich are bequeathed with much more economically productive social networks that maintain economic rank. However, social networks are closely allied with culture. Yet, subordinate groups may face adverse terms of recognition (that is, the framework within which they negotiate their interactions with other social groups). Regionally, individuals and groups face highly unequal opportunities to better themselves economically and socially. Because education and wealth help a person gain influence in society, voice and political power are also generally thought to be correlated with economic well-being. Therefore, the interaction between these mutually reinforcing economic, social and political inequalities perpetuates them across generations. Notably, there are three competing concepts of inequality: global, international and inter country. For the global inequality definition, line up all citizens of the world and calculate the inequality in the distribution of their real incomes (adjusted for purchasing power parity). Here, the global inequality measures that belong to the general entropy class (such as a mean log deviation or Theil's index) can be neatly decomposed into inequality attributable to

inequalities between persons within each country as well as the mean differences of income between countries (Shorrocks, 1980).

On the other hand, within-country inequality is what the overall inequality in the world would be if there were no differences in mean consumption across countries but each country had its actual inequality level. Basically, between-country inequality can be interpreted as measuring what the level of inequality in the world would be if everyone within each country had the same consumption level (as given by the country average). Thus, the total inequality in the world is the sum of these two parts while the ratios of the respective parts to total inequality provide a measure of the percentage contribution of between-country as well as within-country inequality to total inequality.

For international inequality, each person has his or her country's mean income. Operationally, one can refer to the between-country inequality as international inequality (that is inequality in the distribution of all of the world's citizens) but with each person assigned the mean income of his or her country instead of his or her own income. Here, global inequality is calculated by simply adding international inequality to within-country inequality. However, as the third major concept, the implicit value judgment in using inter-country inequality instead of international inequality is that countries (not people) should get equal weight in assessing the fairness of the division of the gains from globalization. On one hand, the measures most widely quoted treat each country as one observation. On the other hand, the decompositions of world inequality into between-country and within-country components give people equal weight (World Bank, 2006).

Essentially, the Human development index (HDI) presents averages concealing wide disparities in human development across people in a country. However, United Nations (2010) have constructed the Inequality Adjusted-Human Development Index (IHDI) to be directly comparable to the HDI (reflecting inequality in each dimension of the IHDI for a large number of countries). In fact, the IHDI has desirable statistical properties for cross-country estimates that enable combination of data from different sources (such as health data from life tables as well as income data from household surveys). Clearly, the

IHDI takes into account not only a country's average human development (as measured by health, education and income indicators but also how it is distributed). Here, we can think of each individual in a society as having a personal HDI. Operationally, there are differences across people and the average HDI differs from personal HDI levels. Thus, the IHDI accounts for inequalities in life expectancy, schooling and income by "discounting" each dimension's average value according to its level of inequality. However, the IHDI will be equal to the HDI when there is no inequality across people but falls further below the HDI as inequality rises. Consequently, the HDI can be viewed as an index of potential human development or the maximum IHDI that could be achieved if there were no inequality. On the other hand, the IHDI is the actual level of human development accounting for inequality. Therefore, the difference between the HDI and the IHDI measures the "loss" in potential human development due to inequality.

Generally, table 2.1 shows the total loss in human development due to multidimensional inequalities as well as the loss in each dimension and the effects of inequality on country HDI rank. Here, countries with less human development have more multidimensional inequality (and thus larger losses in human development) though there is significant variation. Regrettably, people in sub-Saharan Africa suffer the largest HDI losses because of substantial inequality across all three dimensions. Specifically, the Human Development Index (HDI) is a composite index measuring average achievement in three basic dimensions of human development: a long and healthy life, knowledge and decent standard of living.

As a summary, measure of human development, HDI measures the average achievements in a country in the above three basic dimensions of human development. Computationally, the HDI is the geometric means of normalized indices measuring achievements in each dimension. Here, the first step is to create sub-indices for each dimension. Here, minimum and maximum values (goal posts) need to be set in order to transform the indicators into indices between 0 and 1 (United Nations, 2010).

TABLE 2.1. COMPARATIVE INEQUALITY (ADJUSTED) HUMAN DEVELOPMENT INDEX: SCP COUNTRIES DATA.

A S/N	B COUNTRIES	C REGION	D SUB REGION	E INCOME STATUS	F HDI RANK 2010	G HDI VALUE 2010	H INEQUALITY-ADJUSTED HDI			J CHANGE IN RANK %
							H VALUE 2010	I OVERALL LOSS %	J CHANGE IN RANK %	
1	ANGOLA	SUBSAHARAN	CENTRAL AFRICA	LMC	140	0.403	0.242	39.9	-4	
2	ANTIGUA AND BARBUDA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-	
3	BAHAMAS, THE	CARRIBEAN	CARRIBEAN AMERICA	HIC	43	0.784	0.671	14.4	-4	
4	BARBADOS	CARRIBEAN	CARRIBEAN AMERICA	HIC	42	0.788	-	-	-	
5	BELIZE	CARRIBEAN	CARRIBEAN AMERICA	LMC	78	0.694	0.495	28.7	-16	
6	BENIN	SUBSAHARAN	WEST AFRICA	LIC	134	0.435	0.282	35.2	-5	
7	BOTSWANA	SUBSAHARAN	SOUTHERN AFRICA	UMC	98	0.633	-	-	-	
8	BURKINA FASO	SUBSAHARAN	WEST AFRICA	LIC	161	0.305	0.195	36.2	3	
9	BURUNDI	SUBSAHARAN	EASTERN AFRICA	LIC	166	0.282	0.177	37.0	2	
10	CAMEROON	SUBSAHARAN	CENTRAL AFRICA	LMC	131	0.460	0.304	33.9	-1	
11	CAPE VERDE	SUBSAHARAN	WEST AFRICA	LMC	118	0.534	-	-	-	
12	CENTRAL AFRICAN REPUBLIC	SUBSAHARAN	CENTRAL AFRICA	LIC	159	0.315	0.183	42.0	-3	
13	CHAD	SUBSAHARAN	CENTRAL AFRICA	LIC	163	0.295	0.179	39.3	0	
14	COMOROS	SUBSAHARAN	EASTERN AFRICA	LIC	140	0.428	0.240	43.9	-11	
15	DEM. REPOF CONGO	SUBSAHARAN	CENTRAL AFRICA	LIC	168	0.239	0.153	36.2	0	
16	CONGO	SUBSAHARAN	CENTRAL AFRICA	LMC	126	0.489	0.334	31.8	0	
17	COOK ISLANDS	PACIFIC	POLYNESIA OCEANIA	-	-	-	-	-	-	
18	COTE D'IVOIRE	SUBSAHARAN	WEST AFRICA	LMC	149	0.397	0.254	36.1	3	
19	DJIBOUTI	SUBSAHARAN	WEST AFRICA	LMC	147	0.402	0.252	37.3	6	
20	DOMINICA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-	
21	DOMINICAN REPUBLIC	CARRIBEAN	CARRIBEAN AMERICA	UMC	88	0.663	0.499	24.8	-7	
22	EQUATORIAL GUNINEA	SUBSAHARAN	CENTRAL AFRICA	LIC	117	0.538	-	-	-	
23	ERITREA	SUBSAHARAN	EASTERN AFRICA	LIC	-	-	-	-	-	
24	ETHIOPIA	SUBSAHARAN	EASTERN AFRICA	LIC	157	0.328	0.216	34.3	1	
25	FIJI	PACIFIC	MELANESIA OCEANIA	UMC	86	0.669	-	-	-	
26	GABON	SUBSAHARAN	CENTRAL AFRICA	UMC	93	0.648	0.512	21.0	5	
27	GAMBIA	SUBSAHARAN	WEST AFRICA	LIC	151	0.390	0.238	39.0	-2	
28	GHANA	SUBSAHARAN	WEST AFRICA	LIC	130	0.467	0.349	25.4	7	
29	GRENADA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-	
30	GUINEA	SUBSAHARAN	WEST AFRICA	LIC	156	0.340	0.209	38.4	-1	
31	GUINEA- BISSAU	SUBSAHARAN	WEST AFRICA	LIC	164	0.289	0.166	42.4	-2	
A S/N	B COUNTRIES	C REGION	D SUB REGION	E INCOME STATUS	F HDI RANK	G HDI VALUE	H VALUE	I OVERALL	J CHANGE	

					2010	2010	2010	LOSS %	IN RANK %
32	GUYANA	CARRIBEAN	CARRIBEAN AMERICA	LMC	104	0.611	0.497	18.6	7
33	HAITI	CARRIBEAN	CARRIBEAN AMERICA	LIC	145	0.404	0.239	40.8	-7
34	JAMAICA	CARRIBEAN	CARRIBEAN AMERICA	UMC	80	0.688	0.574	16.6	9
35	KENYA	SUBSAHARAN	EASTERN AFRICA	LIC	128	0.470	0.320	31.9	-1
36	KIRIBATI	PACIFIC	MICRONESIA OCEANIA	LMC	-	-	-	-	-
37	LESOTHO	SUBSAHARAN	SOUTHERN AFRICA	LMC	141	0.427	0.282	34.0	0
38	LIBERIA	SUBSAHARAN	WEST AFRICA	LIC	162	0.300	0.188	37.3	1
39	MADAGASCAR	SUBSAHARAN	EASTERN AFRICA	LIC	135	0.435	0.308	29.2	3
40	MALAWI	SUBSAHARAN	EASTERN AFRICA	LIC	153	0.385	0.261	32.1	8
41	MALI	SUBSAHARAN	WEST AFRICA	LIC	160	0.309	0.191	38.3	0
42	MARSHALL ISLANDS	PACIFIC	MICRONESIA OCEANIA	LMC	-	-	-	-	-
43	MAURITANIA	SUBSAHARAN	WEST AFRICA	LIC	136	0.433	0.281	35.1	-5
44	MAURITIUS	SUBSAHARAN	EASTERN AFRICA	UMC	72	0.701	-	-	-
45	MICRONESIA FED. STATES	PACIFIC	MICRONESIA OCEANIA	LMC	103	0.614	0.375	39.0	-11
46	MOZAMBIQUE	SUBSAHARAN	EASTERN AFRICA	LIC	165	0.284	0.155	45.0	-2
47	NAMIBIA	SUBSAHARAN	SOUTHERN AFRICA	UMC	105	0.606	0.338	44.3	-15
48	NAURU	PACIFIC	MICRONESIA OCEANIA	-	-	-	-	-	-
49	NIGER	SUBSAHARAN	WEST AFRICA	LIC	167	0.261	0.173	33.9	2
50	NIGERIA	SUBSAHARAN	WEST AFRICA	LMC	142	0.423	0.246	41.7	-6
51	NILE	PACIFIC	POLYNESIA OCEANIA	-	-	-	-	-	-
52	PALAU	PACIFIC	MICRONESIA OCEANIA	UMC	-	-	-	-	-
53	PAPUA NEW GUINEA	PACIFIC	MELANESIA OCEANIA	LMC	137	0.431	-	-	-
54	RWANDA	SUBSAHARAN	EASTERN AFRICA	LIC	152	0.385	0.243	37.0	3
55	SAINT KITTS/NEVIS	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-
56	SAINT LUCIA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-
57	SAINT VINCENT/ GRENADINES	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-
58	SAMAO	PACIFIC	POLYNESIA OCEANIA	LMC	-	-	-	-	-
59	SAOTOME/PRINCI PE	SUBSAHARAN	CENTRAL AFRICA	LMC	127	0.488	-	-	-
60	SENEGAL	SUBSAHARAN	WEST AFRICA	LMC	144	0.411	0.262	36.2	0
61	SEYCHELLES	SUBSAHARAN	EASTERN AFRICA	UMC	-	-	-	-	-
62	SIERRA LEONE	SUBSAHARAN	WEST AFRICA	LIC	158	0.317	0.193	39.3	-1
A	B	C	D	E	F	G	H	I	J
S/N	COUNTRIES	REGION	SUB REGION	INCOME STATUS	HDI RANK	HDI VALUE	INEQUALITY-ADJUSTED HDI		
							VALUE	OVERALL	CHANGE

					2010	2010	2010	LOSS %	IN RANK %
63	SOLOMON ISLAND	PACIFIC	MELANESIA OCEANIA	LIC	123	0.494	-	-	-
64	SOMALIA	SUBSAHARAN	EASTERN AFRICA	LIC	-	-	-	-	-
65	SUDAN	SUBSAHARAN	NORTH AFRICA	LMC	154	0.379	-	-	-
66	SURINAME	CARRIBEAN	CARRIBEAN AMERICA	UMC	94	0.646	0.489	24.3	-7
67	SWAZILAND	SUBSAHARAN	SOUTHERN AFRICA	LMC	121	0.498	0.320	35.7	-7
68	TANZANIA	SUBSAHARAN	EASTERN AFRICA	LIC	148	0.398	0.285	28.4	9
69	TIMOR LESTE	PACIFIC	OCEANIA		120	0.502	0.334	33.3	-4
70	TOGO	SUBSAHARAN	WEST AFRICA	LIC	139	0.428	0.287	32.9	2
71	TONGA	PACIFIC	POLYNESIA OCEANIA	LMC	85	0.677	-	-	-
72	TRINIDAD AND TOBAGO	CARRIBEAN	CARRIBEAN AMERICA	HIC	59	0.736	0.621	15.5	-2
73	TUVALU	PACIFIC	POLYNESIA OCEANIA	LMC	-	-	-	-	-
74	UGANDA	SUBSAHARAN	EASTERN AFRICA	LIV	143	0.422	0.286	32.1	5
75	VANUATU	PACIFIC	MELANESIA OCEANIA	LMC	-	-	-	-	-
76	ZAMBIA	SUBSAHARAN	EASTERN AFRICA	LIC	-	-	-	-	-
77	ZIMBABWE	SUBSAHARAN	EASTERN AFRICA	LIC	169	0.140	0.098	29.9	0
78	OECD	REGIONAL	INTERNATIONAL	HIC	-	0.879	0.789	10.2	-
79	NON-OECD	REGIONAL	INTERNATIONAL	HIC	-	0.844	0.756	10.5	-
80	SSA	REGIONAL	INTERNATIONAL	LIC	-	0.389	0.261	32.8	-
81	LDC	REGIONAL	INTERNATIONAL	LIC	-	0.386	0.263	31.9	-
82	WORLD	GLOBAL	WORLDWIDE	HIC/LIC	-	0.624	0.489	21.7	-

NOTE: LMC = Low Middle Income Country
 UMC = Upper Middle Income Country
 HIC = High-Income Country
 LIC = Low-Income Country
 SSA = SUB-SAHARAN AFRICA
 LDC = LEAST DEVELOPED COUNTRIES
 OECD = ORGANIZATION OF ECONOMIC COOPERATION AND DEVELOPMENT

Income Status = Economies are divided among income groups according to 2009 GNI per capita (calculated using World bank Atlas Method):

LIC Group = US \$395<
 LMC Group = US \$996 – 3945
 UMC Group = US \$3946 – 12,195
 HIC Group = US \$12, 196 >

SUBSAHARAN COUNTRIES = 47
 PACIFIC COUNTRIES = 15
 CARRIBEAN COUNTRIES = 15

And because the geometric mean is used for aggregation, the maximum value does not affect the relative comparison (in percentage terms) between any two countries or periods of time. Here, the maximum values are set to the actual observed maximum

values of the indicators from the countries in the time series (1980-2010). In contrast, the minimum values will affect comparisons, so values that can be approximately conceived of as subsistence values or natural zeros are used. Thus, progress is measured against minimum levels that a society needs to survive overtime. Clearly, the minimum values are set at twenty years for life expectancy; at zero years for both education variables as well as at 163 for per capita gross national income (GNI). And having defined the minimum and maximum values, the sub-indices are calculated as follows:

$$\text{Dimension index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}} \quad (2.1)$$

Therefore, the HDI is the geometric mean of the three dimension indices:

$$[I_{Life}^{1/3} \times I_{Education}^{1/3} \times I_{Income}^{1/3}] \quad (2.2)$$

Indeed, expression (2.2) embodies imperfect sustainability across all HDI dimensions. However, the Inequality Adjusted Human Development Index (IHDI) adjusts the Human Development Index (HDI) for inequality in distribution of each dimension across the population.

Essentially, IHDI is based on a distribution-sensitive class of composite indices as proposed by Foster, et al (2005), which draws on the Atkinson (1970) family of inequality measures. Basically, it is computed as a geometric mean of geometric means that is calculated across the population for each dimension separately (Alkire and Foster, 2010). Here, the IHDI accounts for inequalities in HDI dimensions by “discounting each dimension’s average value according to its level of inequality). Practically, the IHDI equals the HDI when there is no inequality across people. But, this may be less than the HDI as inequality rises. Thus, the IHDI is the actual level of human development (accounting for the observed inequality). On the other hand, the HDI can be viewed as an index of potential human development (or the maximum level of HDI) that could be achieved if there was no inequality. Therefore, the loss in potential human development due to inequality is given by the difference between the HDI and the IHDI

(which can be expressed as a percentage). Computationally, the IHDI draws from the family of inequality measures and sets the aversion parameter Σ equal to 1. consequently, the inequality measure is

$$A = 1 - g/\mu \tag{2.3}$$

Where g is the geometric mean and

μ is the arithmetic mean of the distribution.

Symbolically, this can be written as

$$A_x = 1 - \frac{\sqrt[n]{X_1 \dots X_n}}{\bar{X}} \tag{2.4}$$

Where $\{x_1, \dots, x_n\}$ denotes the underlying distribution in the dimensions of interest

A_x is obtained for each variable (life expectancy, years of schooling and disposable income or consumption per capita) using household survey data as well as life table.

Again, the mean achievement in a dimension (\bar{X}) is adjusted for inequality as follows:

$$X^* = \bar{X} (1 - A_x) = \sqrt[n]{X_1 \dots X_n} \tag{2.5}$$

Therefore \bar{X} (geometric mean of the distribution) reduces the mean according to the inequality in distribution as well as emphasizing the lower end of the distribution. Similarly, the inequality adjusted dimension indices (I_{ix}) are obtained from the HDI dimension indices (I_x) by multiplying them by $(1 - A_x)$, where A_x is the corresponding Atkinson measure:

$$I_{ix} = (1 - A_x) \cdot I_x \tag{2.6}$$

Here, the inequality-adjusted income index (I^*_{income}) is based on the unlogged gross national income (GNI) index, I^*_{income} . Clearly, this enables the IHDI to account for the full effect of income inequality.

In the final analysis, the IHDI is the geometric mean of the three dimension indices adjusted for inequality as follows:

$$IHDI = \sqrt[3]{(I - A_{life}) (I - A_{education}) (I - A_{income})} \text{ HDI} \quad (2.7)$$

Clearly, (2.7) represents the Human development index value adjusted for inequalities in the three basic dimensions of human development (that is comparatively reported for sub-Saharan, pacific and Caribbean countries). Regrettably, the regional data shows a high degree of inequality as well as poor human development among the people of these regions.

3.0. REGIONAL POVERTY: ACP EXPERIENCE

Undisputedly, poverty amid plenty is the world's greatest challenge. In fact, the poor people live without fundamental freedoms of action and choice that the better off take

for granted. They often lack adequate food and shelter, education and health as well as deprivations that keep them from leading the kind of life that everyone values. Again, they face extreme vulnerability to ill-health, economic dislocation and natural disasters. And often, they are exposed to ill treatment by institutions of the state and society as well as being powerless to influence key decisions affecting their lives. Regrettably, all these are the dimensions of poverty (World Bank, 2001). Indeed, poor people are particularly vulnerable to adverse events outside their control. That is, they are often treated badly by the institutions of state and society as well as being excluded from voice and power in those institutions.

On one hand, one route for investigating the causes of poverty is to examine the dimensions highlighted by poor people:

- (A) Lack of income and assets to attain basic necessities (food, shelter, clothing, as well as acceptable levels of health and education);
- (B) Sense of voicelessness and powerlessness in the institutions of state and society;
and
- (C) Vulnerability to adverse shocks, linked to as inability to cope with them.

On the other hand, to understand the determinants of poverty in all its dimensions, it helps to think in terms of people's assets, productivity of these assets as well as the volatility of returns. Notably, these assets are of several kinds:

- (I) Human assets (such as the capacity for basic labor, skills, and good health);
- (II) Natural Assets (such as land);
- (III) Physical assets (such as access to infrastructure);
- (IV) Financial assets (such as savings and access to credit);
- (V) Social assets (such as network of contacts and reciprocal obligations that can be called on in time of need as well as political influence over resources).

Clearly, the returns to these assets depend on access to markets as well as all the global, national and local influences on returns in these markets. But these returns depend not just on the behavior of markets. They also depend on the performance of institutions of state and society. Yet, underlying asset ownership and returns to assets

are not only economic but also fundamental political and social forces. Here, access to assets depends on a legal structure that defines and enforces private property rights as well as on customary norms that define common property resources. Again access may be affected by implicit and explicit discrimination on the basis of gender, ethnicity, race, or social status. However, access to assets and returns to assets are affected by public policy and state interventions (which are shaped by the political influence of different groups). Indeed, lacking assets is both a cause and an outcome of poverty. In other words, poor health, deficient skills, scant access to basic services as well as the humiliations of social exclusion reflects deprivations in personal, public and social assets. Also, human, physical and natural assets lie at the core of whether as individual, household or group lives in poverty (or escapes it). Thus, these assets interact with market and social opportunities to generate income, better quality of life and a sense of psychological well-being.

Regrettably, poor people have few assets in part because they live in poor countries or in poor areas within countries. They also lack assets because of stark inequalities in the distribution of wealth as well as the benefits of public action. However, poor women and men have stressed that officials are often unresponsive to them. They have shared countless examples of criminality, abuse and corruption in their encounters with public institutions and concluded that they have little recourse to justice. In describing their encounters with institutions, poor people have also drawn attention to the shame and indignity of being treated with arrogance, rudeness and disdain. Notably, social institutions (kinship systems, community organizations, and informal networks) greatly affect poverty outcomes. Here, they do so by affecting the productivity of economic assets; strategies for coping with risk, capacity to pursue new opportunities as well as the extent to which particular voices are heard when important decisions are made. Nevertheless, discrimination on the basis of gender, ethnicity, race, religion or social status can lead to social exclusion while locking people in long-term poverty traps.

However, values, norms and social institutions may reinforce persistent inequalities between groups in society (as with gender-based prejudice throughout much of the

world). Again, economic inequalities reinforced by social barriers make it especially difficult for poor people to move out of poverty. In other words, when social distinctions between groups are used to perpetuate inequalities in access to material resources; they generate rigid sociopolitical hierarchies that constitute powerful social barriers explicitly aimed at preserving the status of the better-off. Consequently, they place crippling constraints on individuals.

Naturally, for poor people risk averse because they live close to the margin of survival and the prospects of incurring the wrath of powerful elites by challenging these barriers is intimidating. On the other hand, rigid stratification creates obstacles to collective action. That is, if the distribution of power in a community is too skewed, prospects for trust and cooperation are low. In its most extreme form and under conditions of economic deprivation (and non-democratic government) ethnic fragmentation can descend into civil conflict.

Indeed, the civil conflict is both a cause and a consequence of poor economic performance. Yet, the most important cost of civil conflict is loss of life (humanitarian tragedy). Notably, civil conflict can accelerate the collapse of the state disproportionately hurting poor people. Here, the problems of civil conflicts may spill across borders while increasing the burdens of neighboring countries. Thus, a focus on deprivation is fundamental to human development.

Clearly, the dimension of poverty goes far beyond inadequate income. Rather, it includes poor health and nutrition; low education and skills; inadequate livelihoods, bad housing conditions; social exclusion and lack of participation. In general, experienced by people around the world, poverty is obviously multifaceted as well as multidimensional. Here, money-based measures are obviously important, but deprivations in other dimensions and their overlap also need to be considered. This is because of the fact that households facing multiple deprivations are likely to be in worse situations than income poverty measures suggest. Essentially, the multidimensional poverty index (MPI) is grounded in the capability approach and it includes an array of dimensions from

participatory exercises among poor communities as well as emerging international consensus. However, because the measure requires that all data pertain to the same household, the options of dimension are limited. Although simple and policy relevant, MPI complements monetary-based methods by taking a broader approach. In fact, it identifies overlapping deprivations at the household level across the same three dimensions as the house development index (HDI). Therefore, it shows the average number of poor people and deprivations with which poor households contend. Table 3.1 shows the set of estimates related to the multidimensional poverty index for all the sub-Saharan, Caribbean and pacific countries of the study.

TABLE 3.1. COMPARATIVE MULTIDIMENSIONAL POVERTY INDEX: ACP COUNTRIES DATA

A	B	C	D	E	F	G	H	I	J	
SN	COUNTRIES	REGION	SUBREGION	INCOME STATUS	MULTIDIMENSIONAL POVERTY INDEX 2000-2008	POPULATION IN HEADCOUNT (%) 2000-2008	MPI DEPRIVATION (%) 2000-2008	POPULATION MPI RISK (%) 2008-2008	MPI 2013 VALUE	2000
1	ANGOLA	SUBSAHARAN	CENTRALAFRICA	LMC	0.452	77.4	58.4	10.7	-	-

2	ANTIGUA AND BARBUDA	CARRIBEAN	CARRIBEAN AMERICA	UMC	--	-	-	-	-	-
3	BAHAMAS, THE	CARRIBEAN	CARRIBEAN AMERICA	HIC	-	-	-	-	-	-
4	BARBADOS	CARRIBEAN	CARRIBEAN AMERICA	HIC	-	-	-	-	-	-
5	BELIZE	CARRIBEAN	CARRIBEAN AMERICA	LMC	0.024	5.6	42.6	7.6	0.024	16
6	BENIN	SUBSAHARAN	WEST AFRICA	LIC	0.412	72.0	57.3	13.2	0.412	5652
7	BOTSWANA	SUBSAHARAN	SOUTHERN AFRICA	UMC	-	-	-	-	-	-
8	BURKINA FASO	SUBSAHARAN	WEST AFRICA	LIC	0.536	82.6	64.9	8.6	0.535	12282
9	BURUNDI	SUBSAHARAN	EASTERN AFRICA	LIC	0.530	84.5	62.7	12.2	0.530	6127
10	CAMEROON	SUBSAHARAN	CENTRAL AFRICA	LMC	0.299	54.6	54.7	18.3	0.287	9149
11	CAPE VERDE	SUBSAHARAN	WEST AFRICA	LMC	-	-	-	-	-	-
12	CENTRAL AFRICAN REPUBLIC	SUBSAHARAN	CENTRAL AFRICA	LIC	0.512	86.4	59.3	7.6	-	-
13	CHAD	SUBSAHARAN	CENTRAL AFRICA	LIC	0.344	62.9	54.7	28.2	0.344	5758
14	COMOROS	SUBSAHARAN	EASTERN AFRICA	LIC	-	-	-	-	-	-
15	DEM. REP OF CONGO	SUBSAHARAN	CENTRAL AFRICA	LIC	0.393	73.2	53.7	16.1	0.392	44971
16	CONGO	SUBSAHARAN	CENTRAL AFRICA	LMC	0.270	55.9	48.4	22.5	0.208	1600
17	COOK ISLANDS	PACIFIC	POLYNESIA OCEANIA	-	-	-	-	-	-	-
18	COTE D'IVOIRE	SUBSAHARAN	WEST AFRICA	LMC	0.320	52.2	61.4	16.4	0.353	11083
19	DJIBOUTI	SUBSAHARAN	WEST AFRICA	LMC	-	-	-	-	0.139	241
20	DOMINICA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-	-
21	DOMINICAN REPUBLIC	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	0.018	438
22	EQUATORIAL GUINEA	SUBSAHARAN	CENTRAL AFRICA	LIC	-	-	-	-	-	-
23	ERITREA	SUBSAHARAN	EASTERN AFRICA	LIC	-	-	-	-	-	-
24	ETHIOPIA	SUBSAHARAN	EASTERN AFRICA	LIC	0.582	90.0	64.7	5.2	0.564	72415
25	FUJI	PACIFIC	MELANESIA OCEANIA	UMC	-	-	-	-	-	-
26	GABON	SUBSAHARAN	CENTRAL AFRICA	UMC	0.161	35.4	45.5	22.4	-	-
27	GAMBIA	SUBSAHARAN	WEST AFRICA	LIC	0.324	60.4	53.6	17.6	0.324	934
28	GHANA	SUBSAHARAN	WEST AFRICA	LIC	0.140	30.1	46.4	21.4	0.144	7258
29	GRENADA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-	-
30	GUINEA	SUBSAHARAN	WEST AFRICA	LIC	0.505	82.4	61.3	9.4	0.506	7459
31	GUINEA-BISSAU	SUBSAHARAN	WEST AFRICA	LIC	-	-	-	-	-	-
32	GUYANA	CARRIBEAN	CARRIBEAN AMERICA	LMC	-	-	-	-	0.030	58
33	HAITI	CARRIBEAN	CARRIBEAN AMERICA	LIC	-	-	-	-	0.299	5346
34	JAMAICA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-	-
35	KENYA	SUBSAHARAN	EASTERN AFRICA	LIC	0.302	60.4	50.0	23.2	0.299	18863
36	KIRIBATI	PACIFIC	MICRONESIA OCEANIA	LMC	-	-	-	-	-	-
37	LESOTHO	SUBSAHARAN	SOUTHERN AFRICA	LMC	0.220	48.1	45.8	27.5	0.156	759
38	LIBERIA	SUBSAHARAN	WEST AFRICA	LIC	0.484	83.9	57.7	9.5	0.485	2917
39	MADAGASCAR	SUBSAHARAN	EASTERN AFRICA	LIC	0.413	70.5	58.5	14.8	0.357	13463
40	MALAWI	SUBSAHARAN	EASTERN AFRICA	LIC	0.384	72.3	53.2	19.8	0.334	9939
A	B	C	D	E	F	G	H	I	J	
SN	COUNTRIES	REGION	SUB REGION	INCOME STATUS	MULTIDIMENSIONAL POVERTY INDEX 2000-2008	POPULATION IN HEADCOUNT (%) 2000-2008	MPI DEPRIVATION (%) 2000-2008	POPULATION MPI RISK (%) 2008-2008	MPI 2013 VALUE	2000
41	MALI	SUBSAHARAN	WEST AFRICA	LIC	-	-	-	-	0.558	11772
42	MARSHALL ISLANDS	PACIFIC	MICRONESIA OCEANIA	LMC	-	-	-	-	-	-
43	MAURITANIA	SUBSAHARAN	WEST AFRICA	LIC	0.352	61.7	57.1	15.1	0.352	1982
44	MAURITIUS	SUBSAHARAN	EASTERN AFRICA	UMC	-	-	-	-	-	-
45	MICRONESIA FED.	PACIFIC	MICRONESIA	LMC	-	-	-	-	-	-

	STATES		OCEANIA							
46	MOZAMBIQUE	SUBSAHARAN	EASTERN AFRICA	LIC	0.481	79.8	60.3	9.8	0.512	18127
47	NAMIBIA	SUBSAHARAN	SOUTHERN AFRICA	UMC	0.187	39.6	47.2	23.5	0.187	855
48	NAURU	PACIFIC	MICRONESIA OCEANIA	-	-	-	-	-	-	-
49	NIGER	SUBSAHARAN	WEST AFRICA	LIC	0.642	92.7	69.3	4.0	0.642	12437
50	NIGERIA	SUBSAHARAN	WEST AFRICA	LMC	0.368	63.5	57.9	15.7	0.310	81510
51	NILE	PACIFIC	POLYNESIA OCEANIA	-	-	-	-	-	-	-
52	PALAU	PACIFIC	MICRONESIA OCEANIA	UMC	-	-	-	-	-	-
53	PAPUA NEW GUINEA	PACIFIC	MELANESIA OCEANIA	LMC	-	-	-	-	-	-
54	RWANDA	SUBSAHARAN	EASTERN AFRICA	LIC	0.443	81.4	54.4	14.0	0.350	7331
55	SAINT KITTS/NEVIS	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-	-
56	SAINT LUCIA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-	-
57	SAINT VINCENT/ GRENADINES	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-	-
58	SAMAO	PACIFIC	POLYNESIA OCEANIA	LMC	-	-	-	-	-	-
59	SAOTOME/PRINCIPE	SUBSAHARAN	CENTRAL AFRICA	LMC	0.236	51.6	45.8	23.9	0.154	56
60	SENEGAL	SUBSAHARAN	WEST AFRICA	LMC	0.384	66.9	57.4	11.6	0.439	9251
61	SEYCHELLES	SUBSAHARAN	EASTERN AFRICA	UMC	-	-	-	-	-	-
62	SIERRA LEONE	SUBSAHARAN	WEST AFRICA	LIC	0.489	81.5	60.0	11.1	0.439	4321
63	SOLOMON ISLAND	PACIFIC	MELANESIA OCEANIA	LIC	-	-	-	-	-	-
64	SOMALIA	SUBSAHARAN	EASTERN AFRICA	LIC	0.514	81.2	63.3	9.5	0.514	6940
65	SUDAN	SUBSAHARAN	NORTH AFRICA	LMC	-	-	-	-	-	-
66	SURINAME	CARRIBEAN	CARRIBEAN AMERICA	UMC	0.044	7.5	58.8	5.2	0.039	41
67	SWAZILAND	SUBSAHARAN	SOUTHERN AFRICA	LMC	0.183	41.1	44.4	24.5	0.086	231
68	TANZANIA	SUBSAHARAN	EASTERN AFRICA	LIC	0.367	65.3	56.3	23.0	0.332	29416
69	TIMOR LESTE	PACIFIC	OCEANIA	-	-	-	-	-	0.360	749
70	TOGO	SUBSAHARAN	WEST AFRICA	LIC	0.284	54.3	52.4	21.6	0.284	3003
71	TONGA	PACIFIC	POLYNESIA OCEANIA	LMC	-	-	-	-	-	-
72	TRINIDAD AND TOBAGO	CARRIBEAN	CARRIBEAN AMERICA	HIC	-	-	-	-	0.020	74
73	TUVALU	PACIFIC	POLYNESIA OCEANIA	LMC	-	-	-	-	-	-
74	UGANDA	SUBSAHARAN	EASTERN AFRICA	LIV	-	-	-	-	0.367	20530
75	VANUATU	PACIFIC	MELANESIA OCEANIA	LMC	-	-	-	-	0.129	67
76	ZAMBIA	SUBSAHARAN	EASTERN AFRICA	LIC	0.325	63.7	51.1	17.8	0.328	7739
77	ZIMBABWE	SUBSAHARAN	EASTERN AFRICA	LIC	0.174	38.5	45.2	24.6	0.172	4915
78	OECD	REGIONAL	INTERNATIONAL	HIC	-	-	-	-	-	-
79	NON-OECD	REGIONAL	INTERNATIONAL	HIC	-	-	-	-	-	-
80	SSA	REGIONAL	INTERNATIONAL	LIC	-	-	-	-	-	-
81	LDC	REGIONAL	INTERNATIONAL	LIC	-	-	-	-	-	-
82	WORLD	GLOBAL	WORLDWIDE	HIC/LIC	-	-	-	-	-	-

NOTE: LMC = Low Middle Income Country
 UMC = Upper Middle Income Country
 HIC = High-Income Country
 LIC = Low-Income Country
 SSA = SUB-SAHARAN AFRICA
 LDC = LEAST DEVELOPED COUNTRIES
 OECD = ORGANIZATION OF ECONOMIC COOPERATION AND DEVELOPMENT
 Income Status = Economies are divided among income groups according to 2009 GNI per capita (calculated using World bank Atlas Method)
 LIC Group = US \$395
 LMC Group = US \$996 – 3945
 UMC Group = US \$3946 – 12,195
 HIC Group = US \$12, 196 >

SUBSAHARAN COUNTRIES = 47

PACIFIC COUNTRIES	=	15
CARRIBEAN COUNTRIES	=	15

Operationally, the MPI is the product of the multidimensional poverty headcount (the share of people who are multidimensional poor) as well as the average number of deprivations that each multidimensional poor household experiences (i.e. the intensity of their poverty). Basically, it has three dimensions mirroring the HDI (Health, education and living standards) which are reflected in ten indicators (assets, floor, electricity, water, toilet, cooking fuel, children enrolled, years of schooling, child mortality and nutrition) each with equal weight within its dimension. Thus, a household is multidimensional poor if it is deprived in at least two to six indicators. As shown in table 3.1 and immediately apparent, is that the MPI is most appropriate for less developed countries. Clearly, it captures the widespread deprivations in the sub-Saharan Africa, Pacific Oceania as well as the poorest Caribbean American countries. In fact, it reveals the magnitude of poverty beyond monetary measures (which is an important accomplishment). In other words, it helps capture and vividly convey overlapping deprivations (building on international consensus, captured in the MDGs, about the dimensions of serious and unacceptable disadvantage).

Empirically, the MPI identifies multiple deprivations at the individual level in health, education and standard of living. It uses micro data from household surveys and each person in a given household is classified as poor or non poor depending on the number of deprivations, his or her household experiences. Then, these data are aggregated into national measure of poverty. Here, each person is assigned a score relative to his or her household's deprivations in each of the ten component indicators (d) and the maximum score is ten (with each dimension equally weighted). The health and education dimensions have two indicators each while the standard of living dimension has six indicators.

To identify the multidimensional poor, the deprivation score for each household are summed to obtain the household deprivation (c). Statistically, the MPI value is the product of two measures: multidimensional headcount ration and the intensity (or

breadth) of poverty. The headcount ration (H) is the proportion of the population who are multidimensional poor:

$$H = \frac{q}{n} \quad (3.1)$$

Where “*q*” is the number of people who are multidimensional poor while “*n*” is the total population. Here, the intensity of poverty (*A*) reflects the proportion of the weighted component indicators (*d*) in which (on average) poor people are deprived. For poor households only, the deprivation scores are summed and divided by the total number of indicators as well as total number of poor persons:

$$A = \frac{\sum_i^q c}{q^d} \quad (3.2)$$

Where “*c*” is the total number of weighted deprivations that the poor will experience and “*d*” is the total number of component indicators considered. Therefore, the basic intuition is that the MPI represent the share of the population that is multidimensional poor (adjusted by the intensity of the deprivations suffered).

Essentially, MPI is a new measure designed to capture the severe deprivations that each person faces at the same time. It reflects both the incidence of multidimensional deprivation and its intensity (i.e. how many deprivations people experience at the same time). Surely, it can be used to create a comprehensive picture of people living in poverty and permits comparisons across countries and regions of the world as currently being studied. Notably, the human poverty index (HPI) uses country averages to reflect aggregate deprivations in health, education and standard of living. Again, HPI could not identify specific individuals’ households or larger groups of people as jointly deprived. In contrast, the MPI captures how many people experience overlapping deprivations (incidence) and how many deprivations faced on average intensity. Critically, MPI value summaries information on multiple deprivations into a single number and it is calculated by multiplying the incidence of poverty by the average intensity of poverty. In other words, a person is identified as multidimensional poor, if he or she is one third or more

of ten (weighted) indicators. Thus, the MPI of a country or region is the product of the proportion of poor people (H) and the average share of deprivations that poor people face at the same time. That is, the average intensity of their poverty (A). In other words, MPI (H) multiplied by (A). By directly measuring the different types of poverty in each household, the MPI captures how people experience different deprivations simultaneously.

Indeed, the ability of the MPI to reveal inequalities at a regional level as well as between social groups makes it a vital tool for policy makers. In fact, the global MPI allows us to compare people's poverty and see the eradication of acute multidimensional poverty. Consequently, as reported, if progress continues at the same rate, current generations may see the eradication of acute multidimensional poverty in Africa, Caribbean and Pacific countries. However, the picture in some of these ACP countries looks much less positive. Notably, at the current rate of reduction, it will take decades for some of these ACP countries to halve multidimensional poverty. Again, based on the reported assumptions and estimates, it will take even several years to eradicate poverty as measured by the MPI in developing regions. Yet, these measures will help spur the eradication of multidimensional poverty in ACP countries (as investigated).

4.0 REGIONAL HUNGER: ACP EXPERIENCE

Since the early 1990s, the world has made some progress in reducing hunger. If the recent showdown can be reversed, the millennium development Goal (MGD) target of halving the share of Hungry people in the world (between 1990 and 2015) may be within reach. Regrettably (in 1990 – 1992) about one billion people went hungry and as at

today, about eight hundred and seventy million still suffer from hunger (IFPRI, 2013). Notably, many of the shocks and stresses to which poor and hungry people are exposed are caused by the actions of more affluent regions and countries. Therefore, as long as people go hungry, the fight against hunger must continue. Conceptually, hunger is usually understood to refer to the discomfort associated with lack of food. Here, FAO (2012) defines food deprivation or undernourishment as the consumption of fewer than about 1,800 kilocalories a day which is the minimum that most people require to live a healthy and productive life.

In contrast, under-nutrition goes beyond calories and signifies deficiencies in any or all of the following: energy, protein, or essential vitamins and minerals. In other words, under-nutrition is the result of inadequate intake of food (in terms of either quantity or quality); poor utilization of nutrients due to infections or any other illness or a combination of these factors. In turn, these are caused by household food insecurity; inadequate maternal health or child care practices; or inadequate access to health services, safe water and sanitation. More broadly, malnutrition refers to both under-nutrition (problem of deficiencies) and over-nutrition (problems of unbalanced diets).

Essentially, a country's Global Hunger Index (GHI) is calculated by averaging the percentage of the population that is undernourished, the percentage of children younger than five years that are underweight as well as percentage of children dying before the age of five. Clearly, this calculation will result in a 100 point scale on which zero is the best score (no hunger) while 100 is the worst score (hunger). Here, a value of 100 will be reached only if all children died before their fifth birthday and the whole population was undernourished. On the other hand, a value of zero would mean that a country had no undernourished people in the population and no children younger than five were overweight or no children who died before their fifth birthday. For the severity of hunger, the following scale applies:

$0 \leq 4.9 \Rightarrow$ Low

5.0 - 9.9 \Rightarrow Moderate

10.0 – 19.9 => Serious

20.0 – 29.9 => Alarming

30.0 – 100 => Extremely alarming

Table 4.1 shows the panel scores of GHI for the African, Caribbean and Pacific countries. Although, Africa south of the Sahara made less progress in 1990s, it has caught up since the turn of the millennium and surpassed it with a 2013 GHI score that fell below expectation. Notably, the Africa south of Sahara's GHI score increased marginally between 1990 and 1995 (fell slightly until 2000) and declined more sharply thereafter until the period reflected in 2013 GHI score. However, the large-scale civil wars of the 1990s and 2000 ended while countries earlier beset by conflict became more politically stable. Thus, economic growth resumed on the continent while advances in the fight against HIV and AIDS contributed to a reduction in child mortality in the countries mostly affected by the epidemic. Fortunately, mortality rates for children under age five have declined in Africa south of the Sahara since 2000. Here, a key factor behind the improved rates seems to be the decrease in the prevalence of malaria which coincided with the increased use of insecticide treated bed nets and other anti-malarial interventions (Demombynes and Trommierova, 2007).

TABLE 4.1 COMPARATIVE NATIONAL HUNGER INDEX: ACP COUNTRIES DATA

A	B	C	D	E	F	G	H	I	J
S/N	COUNTRIES	REGION	SUB REGION	INCOME STATUS	GHI: 1990	GHI: 1995	GHI :2000	GHI: 2005	GHI:2013
1	ANGOLA	SUBSAHARAN	CENTRAL AFRICA	LMC	39.5	38.5	31.6	22.7	19.1
2	ANTIGUA AND	CARRIBEAN	CARRIBEAN	UMC	-	-	-	-	-

	BARBUDA		AMERICA						
3	BAHAMAS, THE	CARRIBEAN	CARRIBEAN AMERICA	HIC	-	-	-	-	-
4	BARBADOS	CARRIBEAN	CARRIBEAN AMERICA	HIC	-	-	-	-	-
5	BELIZE	CARRIBEAN	CARRIBEAN AMERICA	LMC	-	-	-	-	-
6	BENIN	SUBSAHARAN	WEST AFRICA	LIC	22.5	20.5	17.3	15.2	13.3
7	BOTSWANA	SUBSAHARAN	SOUTHERN AFRICA	UMC	16.8	17.0	17.8	16.3	13.9
8	BURKINA FASO	SUBSAHARAN	WEST AFRICA	LIC	26.9	22.7	26.1	26.6	22.2
9	BURUNDI	SUBSAHARAN	EASTERN AFRICA	LIC	33.8	38.1	39.5	39.5	38.8
10	CAMEROON	SUBSAHARAN	CENTRAL AFRICA	LMC	23.7	23.8	20.3	16.3	14.5
11	CAPE VERDE	SUBSAHARAN	WEST AFRICA	LMC	-	-	-	-	-
12	CENTRAL AFRICAN REPUBLIC	SUBSAHARAN	CENTRAL AFRICA	LIC	30.7	29.4	28.0	28.5	23.3
13	CHAD	SUBSAHARAN	CENTRAL AFRICA	LIC	38.8	34.9	29.8	29.7	26.9
14	COMOROS	SUBSAHARAN	EASTERN AFRICA	LIC	24.0	27.5	33.3	29.8	33.6
15	DEM. REPOF CONGO	SUBSAHARAN	CENTRAL AFRICA	LIC	23.7	23.9	19.3	18.4	20.5
16	CONGO	SUBSAHARAN	CENTRAL AFRICA	LMC	-	-	-	-	-
17	COOK ISLANDS	PACIFIC	POLYNESIA OCEANIA	-	-	-	-	-	-
18	COTE D'IVOIRE	SUBSAHARAN	WEST AFRICA	LMC	16.3	16.5	17.3	16.4	16.1
19	DJIBOUTI	SUBSAHARAN	WEST AFRICA	LMC	33.5	28.5	27.7	24.0	19.5
20	DOMINICA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-
21	DOMINICAN REPUBLIC	CARRIBEAN	CARRIBEAN AMERICA	UMC	14.9	11.7	9.7	8.8	7.0
22	EQUATORIAL GUINEA	SUBSAHARAN	CENTRAL AFRICA	LIC	-	-	-	-	-
23	ERITREA	SUBSAHARAN	EASTERN AFRICA	LIC	-	40.6	40.2	39.3	35.0
24	ETHIOPIA	SUBSAHARAN	EASTERN AFRICA	LIC	42.3	42.7	37.1	31.0	25.7
25	FIJI	PACIFIC	MELANESIA OCEANIA	UMC	-	-	-	-	-
26	GABON	SUBSAHARAN	CENTRAL AFRICA	UMC	9.7	8.0	7.8	6.9	7.2
27	GAMBIA	SUBSAHARAN	WEST AFRICA	LIC	19.1	20.4	16.1	15.6	14.0
28	GHANA	SUBSAHARAN	WEST AFRICA	LIC	25.5	19.6	15.6	10.7	8.2
29	GRENADA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-
30	GUINEA	SUBSAHARAN	WEST AFRICA	LIC	21.4	21.2	22.4	18.2	16.9
31	GUINEA-BISSAU	SUBSAHARAN	WEST AFRICA	LIC	21.7	20.8	20.6	17.7	14.3
A	B	C	D	E	F	G	H	I	J
S/N	COUNTRIES	REGION	SUB REGION	INCOME STATUS	GHI: 1990	GHI: 1995	GHI :2000	GHI: 2005	GHI:2013
32	GUYANA	CARRIBEAN	CARRIBEAN AMERICA	LMC	14.3	10.2	8.2	8.0	6.6
33	HAITI	CARRIBEAN	CARRIBEAN AMERICA	LIC	33.8	31.7	25.7	27.0	23.3
34	JAMAICA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-

35	KENYA	SUBSAHARAN	EASTERN AFRICA	LIC	21.4	21.0	20.5	20.2	18.0
36	KIRIBATI	PACIFIC	MICRONESIA OCEANIA	LMC	-	-	-	-	-
37	LESOTHO	SUBSAHARAN	SOUTHERN AFRICA	LMC	13.2	14.6	14.6	14.9	12.9
38	LIBERIA	SUBSAHARAN	WEST AFRICA	LIC	23.4	28.2	24.7	20.6	17.9
39	MADAGASCAR	SUBSAHARAN	EASTERN AFRICA	LIC	-	-	-	-	-
40	MALAWI	SUBSAHARAN	EASTERN AFRICA	LIC	30.6	27.6	21.6	18.7	15.1
41	MALI	SUBSAHARAN	WEST AFRICA	LIC	27.4	26.9	24.3	20.7	14.8
42	MARSHALL ISLANDS	PACIFIC	MICRONESIA OCEANIA	LMC	-	-	-	-	-
43	MAURITANIA	SUBSAHARAN	WEST AFRICA	LIC	-	-	-	-	-
44	MAURITIUS	SUBSAHARAN	EASTERN AFRICA	UMC	8.5	7.6	6.5	5.9	5.2
45	MICRONESIA FED. STATES	PACIFIC	MICRONESIA OCEANIA	LMC	-	-	-	-	-
46	MOZAMBIQUE	SUBSAHARAN	EASTERN AFRICA	LIC	36.0	32.0	28.5	25.1	21.5
47	NAMIBIA	SUBSAHARAN	SOUTHERN AFRICA	UMC	22.1	21.9	17.5	17.1	18.4
48	NAURU	PACIFIC	MICRONESIA OCEANIA	-	-	-	-	-	-
49	NIGER	SUBSAHARAN	WEST AFRICA	LIC	36.4	34.6	30.3	25.6	20.3
50	NIGERIA	SUBSAHARAN	WEST AFRICA	LMC	25.3	22.6	17.9	16.3	15.0
51	NILE	PACIFIC	POLYNESIA OCEANIA	-	-	-	-	-	-
52	PALAU	PACIFIC	MICRONESIA OCEANIA	UMC	-	-	-	-	-
53	PAPUA NEW GUINEA	PACIFIC	MELANESIA OCEANIA	LMC	-	-	-	-	-
54	RWANDA	SUBSAHARAN	EASTERN AFRICA	LIC	30.8	37.3	29.0	23.6	15.3
55	SAINT KITTS/NEVIS	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-
56	SAINT LUCIA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-
57	SAINT VINCENT/ GRENADINES	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-
58	SAMAO	PACIFIC	POLYNESIA OCEANIA	LMC	-	-	-	-	-
59	SAOTOME/PRINCI PE	SUBSAHARAN	CENTRAL AFRICA	LMC	-	-	-	-	-
60	SENEGAL	SUBSAHARAN	WEST AFRICA	LMC	18.1	19.8	19.2	3.7	13.8
61	SEYCHELLES	SUBSAHARAN	EASTERN AFRICA	UMC	-	-	-	-	-
62	SIERRA LEONE	SUBSAHARAN	WEST AFRICA	LIC	31.3	29.5	30.0	28.4	22.8
A	B	C	D	E	F	G	H	I	J
S/N	COUNTRIES	REGION	SUB REGION	INCOME STATUS	GHI: 1990	GHI: 1995	GHI :2000	GHI: 2005	GHI:2013
63	SOLOMON ISLAND	PACIFIC	MELANESIA OCEANIA	LIC	-	-	-	-	-
64	SOMALIA	SUBSAHARAN	EASTERN AFRICA	LIC	-	-	-	-	-
65	SUDAN	SUBSAHARAN	NORTH AFRICA	LMC	31.1	25.7	27.2	24.7	27.0
66	SURINAME	CARRIBEAN	CARRIBEAN AMERICA	UMC	11.3	9.9	11.1	8.9	6.7

67	SWAZILAND	SUBSAHARAN	SOUTHERN AFRICA	LMC	10.4	12.9	12.7	12.5	14.4
68	TANZANIA	SUBSAHARAN	EASTERN AFRICA	LIC	23.4	26.9	26.1	20.5	20.6
69	TIMOR LESTE	PACIFIC	OCEANIA		-	-	-	26.0	29.6
70	TOGO	SUBSAHARAN	WEST AFRICA	LIC	23.0	19.1	20.4	18.2	14.7
71	TONGA	PACIFIC	POLYNESIA OCEANIA	LMC	-	-	-	-	-
72	TRINIDAD AND TOBAGO	CARRIBEAN	CARRIBEAN AMERICA	HIC	-	-	-	-	-
73	TUVALU	PACIFIC	POLYNESIA OCEANIA	LMC	-	-	-	-	-
74	UGANDA	SUBSAHARAN	EASTERN AFRICA	LIV	21.4	22.9	19.9	18.6	19.2
75	VANUATU	PACIFIC	MELANESIA OCEANIA	LMC	-	-	-	-	-
76	ZAMBIA	SUBSAHARAN	EASTERN AFRICA	LIC	24.9	24.5	26.3	25.3	24.1
77	ZIMBABWE	SUBSAHARAN	EASTERN AFRICA	LIC	20.0	22.0	21.7	20.5	10.5
78	OECD	REGIONAL	INTERNATIONAL	HIC	-	-	-	-	-
79	NON-OECD	REGIONAL	INTERNATIONAL	HIC	-	-	-	-	-
80	SSA	REGIONAL	INTERNATIONAL	LIC	-	-	-	-	-
81	LDC	REGIONAL	INTERNATIONAL	LIC	-	-	-	-	-
82	WORLD	GLOBAL	WORLDWIDE	HIC/LIC	-	-	-	-	-

NOTE: LMC	=	Low Middle Income Country
UMC	=	Upper Middle Income Country
HIC	=	High-Income Country
LIC	=	Low-Income Country
SSA	=	SUB-SAHARAN AFRICA
LDC	=	LEAST DEVELOPED COUNTRIES
OECD	=	ORGANIZATION OF ECONOMIC COOPERATION AND DEVELOPMENT
Income Status	=	Economies are divided among income groups according to 2009 GNI per capita (calculated using World bank Atlas Method)
LIC Group	=	US \$395 <
LMC Group	=	US \$996 – 3945
UMC Group	=	US \$3946 – 12,195
HIC Group	=	US \$12, 196 >
SUBSAHARAN COUNTRIES	=	47
PACIFIC COUNTRIES	=	15
CARRIBEAN COUNTRIES	=	15

Again, other factors that may have helped cut mortality rates include higher immunization rates as well as greater share of births in medical centre. Others include improved antenatal care and access to clean water and sanitation facilities as well as increasing levels of income leading to better nutrition (and medical care access). However, the situation remains fragile in 2013 despite a good harvest. Yet, recurrent crisis in recent years (combination of sporadic rainfall, locust infestation, crop shortages, high and volatile food prices) have negatively affected food and nutrition security in the region, eroded the coping capacity of already vulnerable groups and weakened their

resilience to shocks. Specifically, the conflict in northern Nigeria as well as migration pressure clearly exacerbated the situation. Therefore, addressing the root causes of the recurrent crises is highly imperative for hunger eradication and food security in Africa, Caribbean and Pacific (ACP) countries.

In fact, in five countries, GHI scores have risen since 1990. Here, the three worst performers are located in Africa South of the Sahara. The increased hunger (since 1990) in Burundi and Comoros can be attributed to prolonged conflict and political instability. In Comoros, the GHI score fell (after peaking in 2000) but climbed up again since 2005. Between 1999 and 2000, Burundi's GHI score rose and remained at a very high level until 2005. With the transition to peace and political stability (as at 2003) the country began a slow recovery from decades of economic decline. However, its high level of undernourishment remains a serious one. Regrettably, the proportion of undernourished people has continued to rise since 1990 and remains one of the highest in Africa. The time for action is now so as to reverse the ugly trend.

5.0 PRODUCTIVE SUSTAINABILITY: ACP EXPERIENCE

Indeed, the global financial crisis and the ensuing developments have heightened the role of developing and emerging economies in the global context. Although the global economy prospects are (today) more positive than they were in the past; growth has begin to show across many African, Caribbean and Pacific economies and elsewhere

continue to struggle. Therefore, it is worthwhile to understand some of the key factors that determine economic growth; helps to explain why some countries are more successful than others in raising income levels and providing opportunities for their respective populations; as well as offering important tools to policy makers and business leaders. And critical challenges remain: policy makers around the globe need to ensure that public finances are sustainable in the longer term, where the pains of deleveraging will be particularly felt by developed economies. However, unemployment or the threat of it remains one of the main challenges to long-term social sustainability. Basically, a country's competitiveness is widely accepted as the key driver for sustaining prosperity and raising the wellbeing of its citizens. In fact, enhancing competitiveness is a long term process that requires improvement across many areas as well as long lasting commitments from relevant stakeholders to mobilize resources, time, and effort. Thus, to make the right decisions, these stakeholders need information and data (WEF, 2013).

Conceptually, competitiveness can be defined as the set of institutions, policies and factors that determine the level of productivity of a country. In turn, the level of productivity sets the level of prosperity that can be reached by an economy. Here, the productivity level also determines the rates of return obtained by investments in an economy (which are the fundamental drivers of its growth rates). In other words, a more competitive economy is the one that is likely to grow faster overtime. Thus, the concept of competitiveness involves static and dynamic components. Although the productivity of a country determines its ability to sustain a high level of income; it is equally one of the determinants of its returns on investment (which is one of the key factors explaining an economy's growth potentials). Operationally, many determinants drive productivity and competitiveness. Yet, understanding the factors behind this process has occupied the minds of economists for several centuries. While all of these neoclassical factors are likely to be important for competitiveness and growth, they may not be mutually exclusive. Consequently, this open-endedness is captured within the global competitiveness index (GCI) by including a weighted average of many different

components (with each measuring a different aspect of competitiveness). Therefore, these components are grouped into twelve pillars of competitiveness.

As the first pillar, institutional environment is determined by the legal and administrative framework within which individuals, firms and governments interact to generate wealth. Here, the quality of institutions has a strong bearing on competitiveness and growth. It influences investment decisions (and organization of production) and plays a key role in the ways in which societies distribute the benefits as well as bearing the costs of development strategies (and policies). Obviously, the role of institutions goes beyond the legal framework. In other words, government attitudes toward markets and freedoms as well as the efficiency of its operations are equally important. Notably, excessive bureaucracy and red tapism; over regulation; corruption; dishonesty in dealing with public contracts; lack of transparency and trustworthiness; inability to provide appropriate services for the business sector as well as political dependence of the judicial system impose significant economic costs to businesses while slowing the process of economic developments.

Secondly, the extensive and efficient infrastructure is critical for ensuring the effective functioning of the economy. As an important factor, it determines the location of economic activity as well as the kinds of activities or sectors that can develop within a country. Operationally, effective modes of transport (including quality roads, railroads, ports and air transport) enable entrepreneurs to get their goods and services to market in a secure and timely manner. It also facilitates the movement of workers to the most suitable jobs. As the third pillar, macroeconomic environment is important for business and also significant for the overall competitiveness of a country. In contrast, macroeconomic disarray harms the economy since the government cannot provide services efficiently (if it has to make high-interest payments on the past debts). However, it is important to note that this pillar only evaluates the stability of the macroeconomic environment of any given nation.

The fourth pillar is Health and Primary Education. Thus, a healthy workforce is vital to a country's competitiveness and productivity. Essentially, this pillar takes into account the quantity and quality of the basic education received by the population (which is increasingly important in today's economy). In fact, lack of basic education can become a constraint on business development, with firms finding it very difficult to move up to the value chain (by producing more sophisticated-value intensive products). As the fifth pillar, higher education and Training is crucial for economies that want to move up the value chain that is beyond simple production processes and products. Basically, the pillar measures secondary and tertiary enrollment rates as well as the quality of education as evaluated by business leaders. Similarly, the extent of staff training is equally taken into consideration because of the importance of vocational/continuous on-the job training for ensuring a constant upgrading of workers' skills. Goods market efficiency is the sixth pillar. Thus, countries with efficient goods markets are well positioned to produce the right mix of products and services given their particular supply and demand conditions as well as to ensure that these goods can be most effectively traded in the economy. It also depends on demand conditions such as customer orientation and buyer sophistication. Clearly, this can create an important competitive advantage as it forces companies to be more innovative as well as customer-oriented and therefore imposes the discipline necessary for efficiency to be achieved in the market. The seventh pillar is labor market efficiency. Here, the efficiency and flexibility of the labor market are very critical for ensuring that workers are allocated to their most effective use in the economy and provided with incentives to give their best effort in their jobs. Again, efficient labor markets must also ensure clear strong incentive for employees as well as efforts to promote meritocracy at the workplace.

Financial Market development is the eight pillar. As an efficient sector, it allocates the resources saved by a nation's citizens, as well as those entering the economy from abroad, to their most productive uses. In other words, it channels resources to those investment projects with the highest expected rate of return. Therefore, a thorough and proper assessment of risk is a key ingredient of a sound financial market. Again, the ninth pillar is Technological Readiness. Here, whether the technology used has or has

not been developed within national borders is irrelevant for its ability to enhance productivity. Yet, the central point is that firms operating in the country need to have access to advanced products and blueprints as well as the ability to absorb and use them. Thus, among the main sources of foreign technology, foreign direct investment plays a key role.

As the tenth pillar, the size of the market affects productivity since large markets allow firms to exploit economies of scale. By including both domestic and foreign markets in the measure of market size, credit should be given to export-driven economies and geographic areas that are divided into many countries but have a single common market. The eleventh pillar is Business Sophistication while Innovation is the twelfth pillar. Operationally, Business Sophistication concerns two elements that are intricately linked: quality of a country's overall business networks as well as the quality of individual firms' operations and strategies. Unlike these other factors, in the long run, standards of living can be largely enhanced by technological innovation. Notably, technological breakthroughs have been at the basis of many of the productivity gains that our economies have historically experienced. Critically, firms in developing countries are expected to design and develop cutting-edge products as well as processes to maintain a competitive edge while moving toward higher value-added activities. However, this progression requires an environment that is conducive to innovative activity and supported by both the public (private) sectors.

As shown in figure 5.1, the above twelve pillars of competitiveness are not independent (WEF, 2013). Here, they tend to reinforce each other, while a weakness in one area tends to have negative impact in others. Indeed, while all of the twelve pillars will matter to a certain extent for all economies, it is clear that they will affect them in different ways. This is because of the fact that different countries are in different stages of development. Clearly, as countries move along the development path, wages tend to increase; and to be able to sustain the higher income, labor productivity must improve. Following the traditional-theory of stages of development, the GCI framework assumes that (in the first stage) the economy is factor-driven and countries compete based on their factor endowments (primarily unskilled labor and natural resources). Here,

companies compete on the basis of price and sell basic products or commodities with their low productivity reflected in low wages. Here maintaining competitiveness at this stage of development hinges primarily on pillar one; pillar two, pillar three, and pillar four.

Again, as a country becomes more competitive, productivity will increase while wages will rise with advancing development. Countries will therefore move into the efficiency-driven stage of development. Here, they must begin to develop more efficient production processes and increase product quality. At this point, competitiveness is increasingly driven by pillar five, pillar six, pillar seven, pillar eight, pillar nine, and pillar ten. In contrast, as countries move into the innovation-driven stage, wages will have risen by so much that they are able to sustain those higher wages and the associated standard of living only if their businesses are able to compete with new and unique products. Again, at this stage, companies must compete by producing new and different goods using the most sophisticated production processes (pillar eleven) as well as by innovating new ones (pillar twelve). Operationally, the global competitiveness index (GCI) takes the stages of development into account by attributing higher relative weights to those pillars that are more relevant for an economy given its particular stage of development. Table 5.1 shows the various GCI for the ACP countries as being investigated. Although sub-Saharan Africa continues its impressive growth rate, there are some regional variations. Notably, growth has largely taken place on the backs of strong investment, favorable commodity prices and prudent macroeconomic stance. In terms of underlying competitiveness, sub-Saharan Africa continues to reflect one of the significant regional variations in the GCI. Generally, sub-Saharan Africa as a whole trails the rest of the world in competitiveness, requiring efforts across many areas to place the region on a firmly sustainable growth and development path going forward. Regrettably, the region continues to register a profound infrastructure deficit. Moreover, the region continues to underperform significantly in providing health and basic education. Notably, the region's poor performance across all basic requirements for competitiveness stands in stark contrast to its comparatively stronger performance in market efficiency, (where particularly the region's middle-income economies fare

relatively well). Moving forward, technological uptake continues to remain weak, with only three economies featuring in the top half of the overall GCI rankings on this pillar (WEF, 2013). Specifically, Nigeria is ranked 120th and the country continues to benefit from its relatively large market size, which has the potential for significant economies of scale as well as being an important factor for attracting investment. Averagely, Nigeria may be benefiting from a large labor market as well as improved financial market. Yet, efforts need to be taken to diversify its economy into the non-oil sector and increase long-term competitiveness

FIGURE 5.1 THE FRAMEWORK OF GLOBAL COMPETITIVENESS INDEX

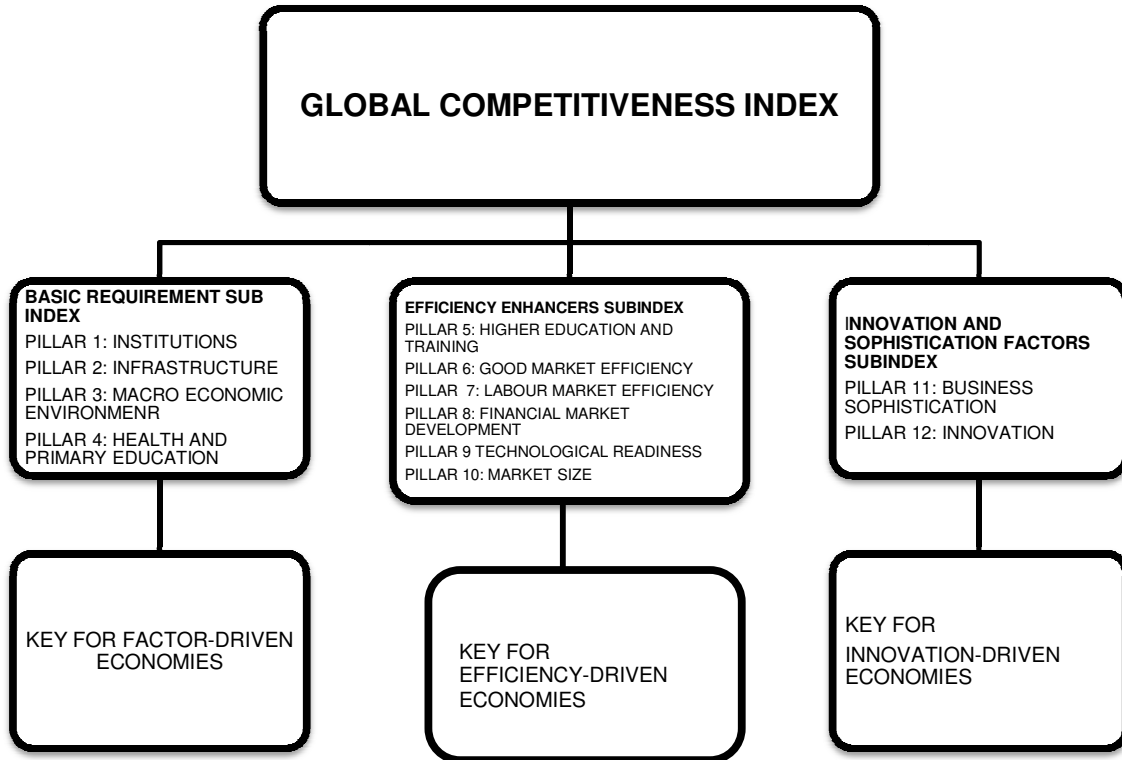


TABLE 5.1 COMPARATIVE (SUSTAINABILITY ADJUSTED) GCI INDEX: ACP COUNTRIES DATA.

A SN	B COUNTRIES	C REGION	D SUB REGION	E INCOME STATUS	F GCI RANK (OUT OF 148) 2013:2014	G GCI SCORE (1-7) 2013:2014	H GCI RANK (OUT OF 148) 2012:2013	I SUSTAINABILITY ADJUSTED GCI 2013:14 SCORE	J DIRECTIONAL CHANGE(+/-)
1	ANGOLA	SUBSAHARAN	CENTRAL AFRICA	LMC	142	3.15	-		
2	ANTIGUA AND BARBUDA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-		
3	BAHAMAS, THE	CARRIBEAN	CARRIBEAN AMERICA	HIC	-	-	-		
4	BARBADOS	CARRIBEAN	CARRIBEAN AMERICA	HIC	47	4.42	47		
5	BELIZE	CARRIBEAN	CARRIBEAN AMERICA	LMC	-	-	-		
6	BENIN	SUBSAHARAN	WEST AFRICA	LIC	130	3.45	127	3.19	-
7	BOTSWANA	SUBSAHARAN	SOUTHERN AFRICA	UMC	74	4.13	74	3.99	+-
8	BURKINA FASO	SUBSAHARAN	WEST AFRICA	LIC	140	3.21	136		
9	BURUNDI	SUBSAHARAN	EASTERN AFRICA	LIC	146	2.92	141		
10	CAMEROON	SUBSAHARAN	CENTRAL AFRICA	LMC	115	3.68	112	3.47	-
11	CAPE VERDE	SUBSAHARAN	WEST AFRICA	LMC	122	3.53	119	3.15	-
12	CENTRAL AFRICAN REPUBLIC	SUBSAHARAN	CENTRAL AFRICA	LIC	-	-	-		
13	CHAD	SUBSAHARAN	CENTRAL AFRICA	LIC	148	2.85	143		
14	COMOROS	SUBSAHARAN	EASTERN AFRICA	LIC	-	-	-		
15	DEM. REP OF CONGO	SUBSAHARAN	CENTRAL AFRICA	LIC	-	-	-		
16	CONGO	SUBSAHARAN	CENTRAL AFRICA	LMC	-	-	-		
17	COOK ISLANDS	PACIFIC	POLYNESIA OCEANIA	-	-	-	-		
18	COTE D'IVOIRE	SUBSAHARAN	WEST AFRICA	LMC	126	3.50	123	3.25	-
19	DJIBOUTI	SUBSAHARAN	WEST AFRICA	LMC	-	-	-		
20	DOMINICA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-		
21	DOMINICAN REPUBLIC	CARRIBEAN	CARRIBEAN AMERICA	UMC	105	3.76	103	3.40	-
22	EQUATORIAL GUINEA	SUBSAHARAN	CENTRAL AFRICA	LIC	-	-	-		
23	ERITREA	SUBSAHARAN	EASTERN AFRICA	LIC	-	-	-		
24	ETHIOPIA	SUBSAHARAN	EASTERN AFRICA	LIC	127	3.50	124	3.20	-
25	FJI	PACIFIC	MELANESIA OCEANIA	UMC	-	-	-		
26	GABON	SUBSAHARAN	CENTRAL AFRICA	UMC	112	3.70	109	3.62	+-
27	GAMBIA	SUBSAHARAN	WEST AFRICA	LIC	116	3.67	113	3.47	-
28	GHANA	SUBSAHARAN	WEST AFRICA	LIC	114	3.69	111	3.48	-
29	GRENADA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-
30	GUINEA	SUBSAHARAN	WEST AFRICA	LIC	147	2.91	142		
31	GUINEA-BISSAU	SUBSAHARAN	WEST AFRICA	LIC	-	-	-		

A	B	C	D	E	F	G	H	I	J
SN	COUNTRIES	REGION	SUB REGION	INCOME STATUS	GCI RANK (OUT OF 148) 2013/2014	GCI SCORE (1-7) 2013/2014	GCI RANK (OUT OF 148) 2012/2013	SUSTAINABILITY ADJUSTED GCI 2013/14 SCORE	DIRECTIONAL CHANGE (+/-)
32	GUYANA	CARRIBEAN	CARRIBEAN AMERICA	LMC	102	3.77	100	3.54	-
33	HAITI	CARRIBEAN	CARRIBEAN AMERICA	LIC	143	3.11	138	2.63	-
34	JAMAICA	CARRIBEAN	CARRIBEAN AMERICA	UMC	94	3.86	92	3.67	--
35	KENYA	SUBSAHARAN	EASTERN AFRICA	LIC	96	3.85	94	3.63	+ -
36	KIRIBATI	PACIFIC	MICRONESIA OCEANIA	LMC	-	-	-	-	-
37	LESOTHO	SUBSAHARAN	SOUTHERN AFRICA	LMC	123	3.52	120	-	-
38	LIBERIA	SUBSAHARAN	WEST AFRICA	LIC	128	3.45	125	3.22	-
39	MADAGASCAR	SUBSAHARAN	EASTERN AFRICA	LIC	132	3.42	129	3.00	-
40	MALAWI	SUBSAHARAN	EASTERN AFRICA	LIC	136	3.32	133	-	-
41	MALI	SUBSAHARAN	WEST AFRICA	LIC	135	3.33	132	-	-
42	MARSHALL ISLANDS	PACIFIC	MICRONESIA OCEANIA	LMC	-	-	-	-	-
43	MAURITANIA	SUBSAHARAN	WEST AFRICA	LIC	141	3.19	137	2.63	-
44	MAURITIUS	SUBSAHARAN	EASTERN AFRICA	UMC	-	-	-	-	-
45	MICRONESIA FED. STATES	PACIFIC	MICRONESIA OCEANIA	LMC	-	-	-	-	-
46	MOZAMBIQUE	SUBSAHARAN	EASTERN AFRICA	LIC	137	3.30	134	3.09	-
47	NAMIBIA	SUBSAHARAN	SOUTHERN AFRICA	UMC	90	3.93	88	3.72	+ -
48	NAURU	PACIFIC	MICRONESIA OCEANIA	-	-	-	-	-	-
49	NIGER	SUBSAHARAN	WEST AFRICA	LIC	-	-	-	-	-
50	NIGERIA	SUBSAHARAN	WEST AFRICA	LMC	120	3.57	117	3.34	-
51	NILE	PACIFIC	POLYNESIA OCEANIA	-	-	-	-	-	-
52	PALAU	PACIFIC	MICRONESIA OCEANIA	UMC	-	-	-	-	-
53	PAPUA NEW GUINEA	PACIFIC	MELANESIA OCEANIA	LMC	-	-	-	-	-
54	RWANDA	SUBSAHARAN	EASTERN AFRICA	LIC	66	4.21	66	-	-
55	SAINT KITTS/NEVIS	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-
56	SAINT LUCIA	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-
57	SAINT VINCENT/ GRENADINES	CARRIBEAN	CARRIBEAN AMERICA	UMC	-	-	-	-	-
58	SAMAO	PACIFIC	POLYNESIA OCEANIA	LMC	-	-	-	-	-
59	SAOTOME/PRINCI PE	SUBSAHARAN	CENTRAL AFRICA	LMC	-	-	-	-	-
60	SENEGAL	SUBSAHARAN	WEST AFRICA	LMC	113	3.70	110	3.41	-
61	SEYCHELLES	SUBSAHARAN	EASTERN AFRICA	UMC	80	4.10	80	-	-
62	SIERRA LEONE	SUBSAHARAN	WEST AFRICA	LIC	144	3.01	139	2.74	-

A	B	C	D	E	F	G	H	I	J
SN	COUNTRIES	REGION	SUB REGION	INCOME STATUS	GCI-RANK(OUT OF148) 2013/2014	GCI-SCORE (1-7) 2013/2014	GCI-RANK(OUT OF148)2012/2013	SUSTAINABILITY ADJUSTEDGCI 2013/14SCORE	DIRECTIONAL CHANGE(+/-)
63	SOLOMON ISLAND	PACIFIC	MELANESIA OCEANIA	LIC	-	-	-	-	-
64	SOMALIA	SUBSAHARAN	EASTERN AFRICA	LIC	-	-	-	-	-
65	SUDAN	SUBSAHARAN	NORTH AFRICA	LMC	-	-	-	-	-
66	SURINAME	CARRIBEAN	CARRIBEAN AMERICA	UMC	106	3.75	104	3.74	+ -
67	SWAZILAND	SUBSAHARAN	SOUTHERN AFRICA	LMC	124	3.52	121	3.30	-
68	TANZANIA	SUBSAHARAN	EASTERN AFRICA	LIC	125	3.50	122	3.27	-
69	TIMOR LESTE	PACIFIC	OCEANIA		138	3.25	135	2.81	-
70	TOGO	SUBSAHARAN	WEST AFRICA	LIC	-	-	-	-	-
71	TONGA	PACIFIC	POLYNESIA OCEANIA	LMC	-	-	-	-	-
72	TRINIDAD AND TOBAGO	CARRIBEAN	CARRIBEAN AMERICA	HIC	92	3.91	90	3.89	+ -
73	TUVALU	PACIFIC	POLYNESIA OCEANIA	LMC	-	-	-	-	-
74	UGANDA	SUBSAHARAN	EASTERN AFRICA	LIV	129	3.45	126	-	-
75	VANUATU	PACIFIC	MELANESIA OCEANIA	LMC	-	-	-	-	-
76	ZAMBIA	SUBSAHARAN	EASTERN AFRICA	LIC	93	3.86	91	3.70	+ -
77	ZIMBABWE	SUBSAHARAN	EASTERN AFRICA	LIC	131	3.44	128	3.19	-
78	UNITED STATES	AMERICA	AMERICA	HIC	5	5.58	5	5.52	+ -
79	UNITED KINGDOM	EUROPE	EUROPE	HIC	10	5.37	10	5.85	+
80	AUSTRALIA	OCEANIA	OCEANIA	HIC	21	5.09	21	5.50	+
81	CHINA	ASIA	ASIA	HIC	29	4.84	29	4.65	+ -

NOTE: LMC = Low Middle Income Country
 UMC = Upper Middle Income Country
 HIC = High-Income Country
 LIC = Low-Income Country
 SSA = SUB-SAHARAN AFRICA
 LDC = LEAST DEVELOPED COUNTRIES
 OECD = ORGANIZATION OF ECONOMIC COOPERATION AND DEVELOPMENT

Income Status = Economies are divided among income groups according to 2009 GNI per capita (calculated using World bank Atlas Method)

LIC Group = US \$395 <
 LMC Group = US \$996 – 3945
 UMC Group = US \$3946 – 12,195
 HIC Group = US \$12, 196 >

SUBSAHARAN COUNTRIES = 47
 PACIFIC COUNTRIES = 15
 CARRIBEAN COUNTRIES = 15

++ = GCI score changes by > 15% to 20%
 + = GCI score changes by +5% to 15%
 + - = GCI score remains stable between +5% and -5%
 - = GCI score changes by 5% to – 15%
 - - = GCI score changes by <15% to – 20%

Unfortunately, institutions remain weak with insufficiently protected property rights, high corruption as well as undue influence. Again, the security situation in the country (already seriously worrisome) continues its downward trend. Consequently, Nigeria must continue to upgrade its infrastructure as well as improve health and primary education. In fact, the country is not harnessing the latest technologies for productivity enhancements as demonstrated by its low rates of ICT penetration. Indeed, the Global Competitiveness Index (GCI) aims to capture the complexity of the phenomenon of national competitiveness, which can be improved only through an array of efforts in different areas that affect the longer-term productivity of a country (which is the key factor affecting economic growth performance of economies).

Basically, the concept of competitiveness aims at capturing the economic development process as a necessary condition for improved living standards. However, recent projections and studies have pointed out the rates of progress seen in the past may not be sustainable going forward. As income levels have risen and more and more emerging markets have entered rapid growth paths; pressures on the environment have become more palpable while concerns over the distribution of the benefits of economic progress within countries have grown. Consequently, many are forced to question whether the prevalent growth model is sustainable overtime. Despite mounting interest in sustainable development, the relationship between environmental (social) sustainability and national competitiveness has been marginally explored. In other words, little is known about how these aspects of sustainability relate to competitiveness and productivity. Taking into account all relevant aspects, it emerges that the relationship between environmental sustainability and competitiveness is multifaceted which affects an economy in different ways. Here, multiple channels support a positive relationship between environmentally sustainable practices and productivity gains. These factors can be identified and described as follows: efficient use of natural resources, improved health, and biodiversity for innovation. In addition to these general sources of potential competitiveness gains for an economy, environmental sustainability can have more marked impacts in particular economic sectors such as agriculture, fishery and forestry. On the other hand, we can analyze those dimensions of social

sustainability that are likely to fuel productivity as well as long-term prosperity while at the same time preserving social stability. Here, we can unbundle the most relevant elements (even if they are often interrelated): inclusion, equity and cohesion as well as resilience.

Therefore, social sustainability can be defined as the institutions, policies and factors that enable all members of society to experience the best possible health, participation and security. In other words, it maximizes their potential to contribute to and benefit from the economic prosperity of the country in which they live. However, the quality of the environment and the structure of the society are strictly correlated. On one hand, well-managed natural resources increase the quality of life, reduce tensions within and between generations; provide better opportunities to the whole community as well as improving the resilience of the society. On the other hand, widespread prosperity which facilitates a high quality of life requires a functioning economy that (by definition) uses natural resources. Therefore, sustainable competitiveness can be defined as the set of institutions, policies and factors that make a nation remain productive over the longer term while ensuring social and environmental sustainability. Although competitiveness can be equated with productivity and economic performance; sustainable competitiveness focuses on concepts that go beyond mere economic wellbeing to include other important elements that render societies sustainably prosperous by ensuring high-quality growth. In other words it aims to gauge not only whether a country has the potential to grow over the medium and long term; but whether the national development process is producing the kind of society in which we want to live.

Based on the above definition, we can develop a framework that aims to create a common ground to develop policies that balance economic prosperity with social inclusion and environmental stewardship. Clearly, the conceptual model is represented in figure 5.2 (WEF, 2013). Essentially, this represents a framework where the forum's index for measuring competitiveness (GCI) is adjusted by factors that encompass social and environmental sustainability. As previously indicated, the GCI is a comprehensive index that takes into account twelve pillars or drivers. However, the new framework as

presented indicated that competitiveness on its own may not lead to sustainable level of prosperity. Thus, while the attainment of a certain level of economic prosperity is essential for achieving high standards of living (within this exercise) countries are assessed also for their ability to generate the long-lasting prosperity for their citizens in a sustainable way. In other words, competitiveness is a necessary but not sufficient condition for continued prosperity. Thus, there is need for social sustainability (adjusted) and environmental sustainability (adjusted) measures of competitiveness. However, the final overall sustainability-adjusted global competitiveness index is an average of the two sustainability-adjusted indexes: Social sustainability-adjusted GCI and environmental sustainability-adjusted GCI. For social sustainability, three conceptual elements can be identified:

1. Access to basic necessities
 - (a) Access to Sanitation
 - (b) Access to improved drinking water
 - (c) Access to healthcare.

2. Vulnerability to shocks
 - (a) Vulnerable employment
 - (b) Extent of informal economy
 - (c) Social safety net protection

3. Social Cohesion
 - (a) Income Gini Index
 - (b) Social mobility
 - (c) Youth empowerment

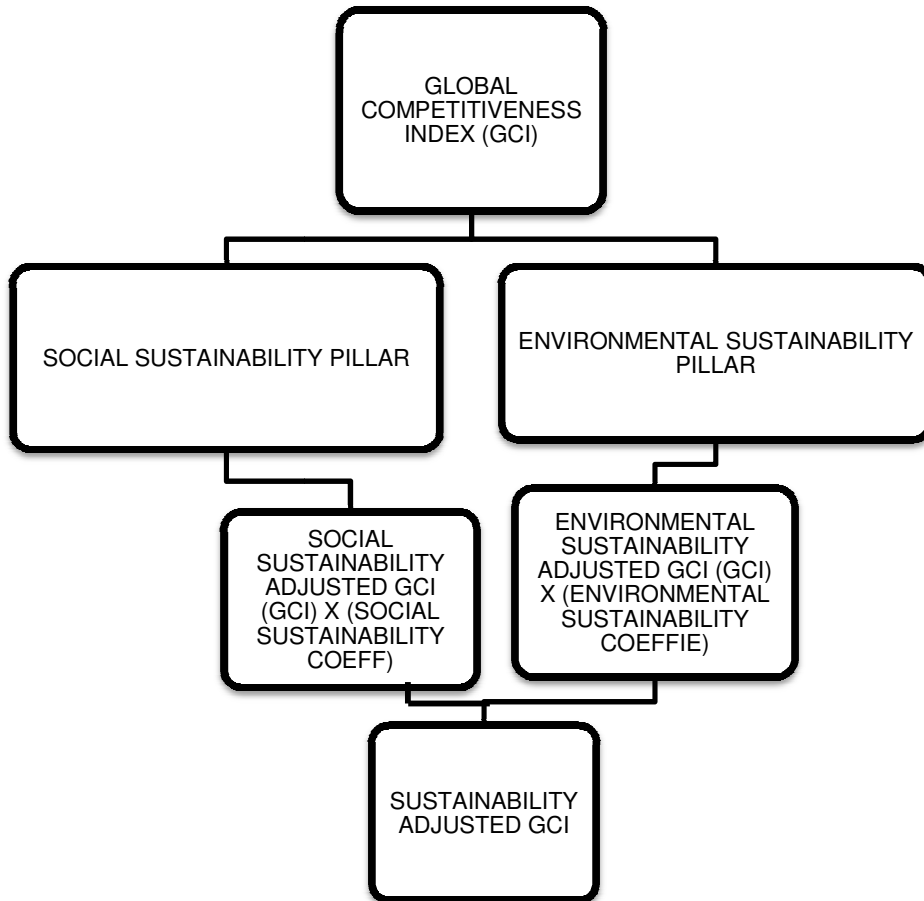
On the other hand, the indicators for environmental sustainability include:

1. Environmental Policy
 - (a) Environmental regulations (stringency and enforcement)
 - (b) Number of ratified international environmental treaties.
 - (c) Terrestrial biome protection

- 2. Use of Renewable Resources
 - (a) Agricultural water intensity
 - (b) Forest cover change
 - (c) Fish stocks' overexploitation

- 3. Degradation of Environment
 - (a) Level of particulate matter concentration.
 - (b) CO₂ intensity
 - (c) Quality of natural environment

FIGURE 5.2 SUSTAINABILITY-ADJUSTED GCI: STRUCTURAL SCHEME



As shown in table 5.1, Ghana's sustainability assessment unveils particular pressures on the social sustainability pillar where (despite continued growth) access to improved

sanitation is still very low and the development process has not yet benefited large portions of the population that have vulnerable jobs or work in the informal economy, whom do not have access to social security. As a result of this structure, income inequality is relatively high and on the rise (highlighting the non-inclusive economic growth in the country). Consequently, this could lead to social tensions in the longer term. Yet, the most important finding of this analysis is that there is no necessary trade-off between being competitive and being sustainable. Generally, many countries at the top of the competitiveness rankings are also the best performers in many areas of sustainability. Subsequently, economies that are able to balance economic progress with social inclusion as well as good effective environmental stewardship will most likely experience higher rates of human progress and prosperity. Therefore, given the complexity of the issue at hand as well as important gaps in data to measure key elements of sustainable competitiveness, the desire to measure key elements of sustainable competitiveness should be designed as a continuous process.

6.0 REGIONAL FRAMEWORK ANALYSIS

Essential, the World Bank linkage model is a recursive dynamic applied general equilibrium model. Its earlier versions were used to study global trade reform: Rural/Urban/North/South (RUNS) model as well as World Agricultural Liberation Study (WALRAS). Initially, both were integrated into separate research programs at the OECD. However, in the mid 1990s, WALRAS was transformed into the OECD GREEN model used to assess the impacts of green house gas mitigation. As at this time, model implementation used second generation programming languages (FORTRAN and C). Subsequently, there were improvements in software so that model development was done with third generation languages such as GAMS, GAUSS and GEMPACK. Yet, the second major advance was the creation of a unified global database known as Global Trade Analysis Program (GTAP) which created a consistent global data set for use in analyzing international economic policy issues. Against this background, the linkage model is a global, multi-region, multi-sector, dynamic applied general equilibrium model. It is currently implemented in GAMS and its specification is virtually free of references to specific dimensions (region, sector, or time). Thus, the model is accompanied by an aggregation facility, which is used to aggregate the extensive GTAP dataset into a tractable dataset for simulation purposes. Here, the output of the aggregation facility is the primary input for the model. Again, the aggregation facility also produces some auxiliary data (such as population) and the model user is expected to provide values for all key elasticities. On the other hand, the dynamic version of the model requires a series of assumptions which are to be provided independently of the aggregation facility (Van der Mensbrugge, 2011).

Notably, the growing availability of micro data sets(such as those from household surveys, labor force surveys, population censuses and community-level surveys) as well as progress in quantitative economic analysis have contributed to a renewed policy relevant interest on the mutual relationship between growth and distribution (Bussolo, et.al. 2010).

Specifically the Global Income Distribution Dynamics (GIDD) model is a global CGE-micro simulation framework that takes into account the macro nature of growth and

integrates a micro economic (individual and household) dimension. By including 121 countries and covering about ninety percent of the world population, GIDD remains the first (macro-micro) global simulation model. Again, GIDD explicitly consider long term time horizons during which changes in the demographic structure may become crucial components of both growth and distribution dynamics. Similarly, the explicit long-term focus of the GIDD can capture the impacts of aging and other demographic changes (such as the skill composition of the population) which may become crucial components of both and distribution dynamics. Indisputably, economic development is a complex process associated with changes in demographic composition, urbanization rates, labor market participation, education attainment and saving rates. Although no single model is able to capture all the above features and their possible interaction; macro-micro simulation models attempt to take into account at least some of the basic mechanisms (Bourguignon, et. al. 2005).

Basically, the distribution D of income y at time t can be expressed as the product of the joint distribution of all relevant household or individual characteristics X and the distribution of income conditional on these characteristic:

$$F_t(y) = D_t = \int \dots \int c_{(x)} g_t \left(\frac{y}{x} \right) v_t(x) dx \quad (6.1)$$

Where $F_t(Y)$ is the density function of the distribution of income and the summation is over the domain $C(X)$ on which X is defined.

Next, define an income generation model describing household per capita income (Y) as a function of the household member's characteristics or endorsements(X), the market reward for those characteristic (β), a set of parameters λ defining labour force participation and occupation status($L|\lambda$), as well as unobservable components(E):

$$y_{i,t} = f(X_{i,t} \beta_t (L_{i,t}/\lambda_t), \varepsilon_{i,t}) \quad (6.2)$$

Perhaps, the Household per capita income (or its version accounting for economies of scale) is the best proxy for household welfare. Therefore, any economic policy should be assessed in terms of its impact on the indicator. Here, vector $\{Y_{i,t} \dots Y_{N,t}\}$ also determines the scalar measures of population welfare such as income distribution and

poverty. Therefore, the income distribution \mathbf{D} for a population of N individuals or households at time t can be defined in terms of endowments, prices, labor status and unobservable:

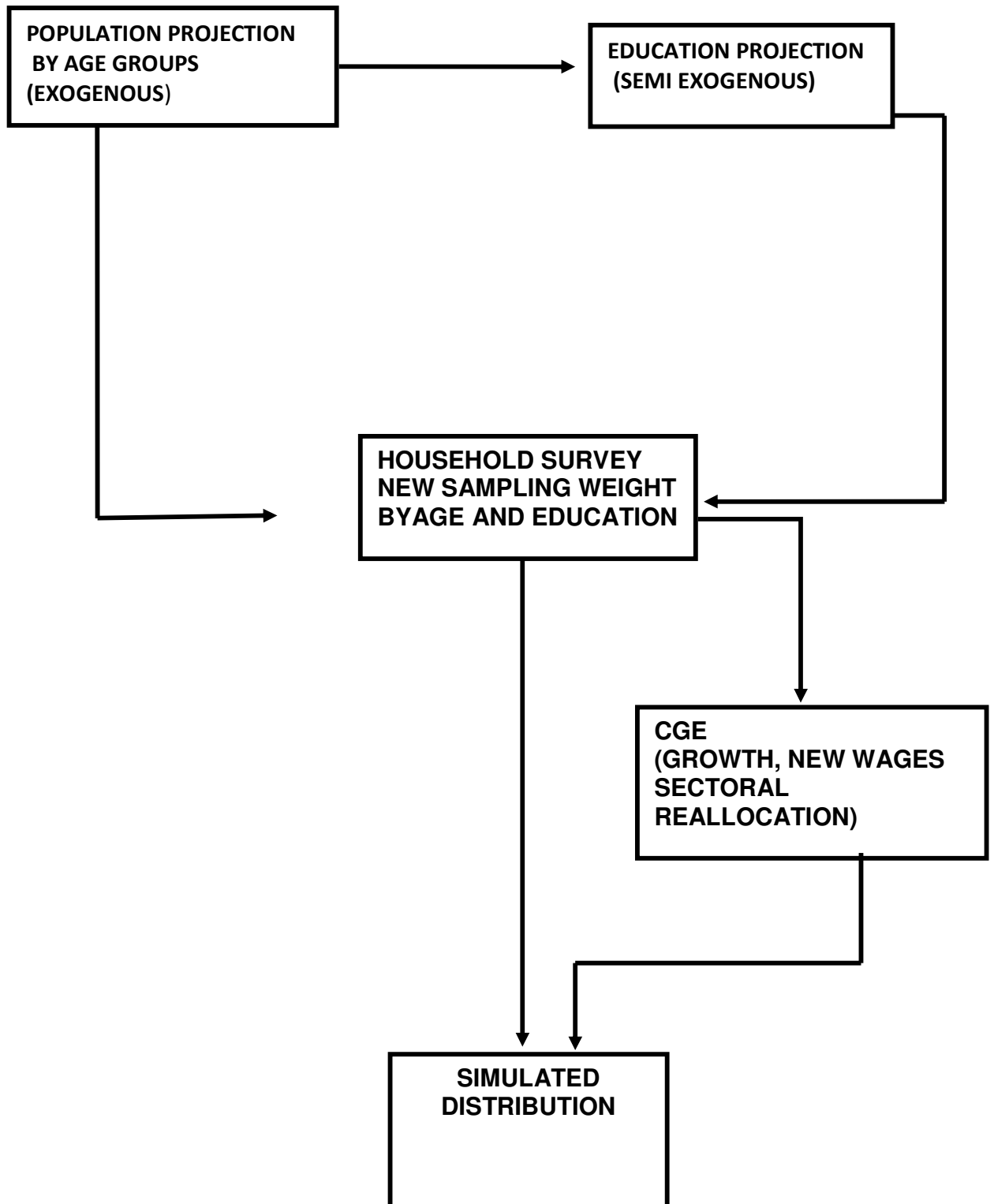
$$D_t = \{Y_{i,t} \dots Y_{N,t}\}$$

$$= \{f(X_{i,t}^1 \beta_t^1(L_{i,t}/\lambda_t), \varepsilon_{i,t}) \dots f(X_{N,t}^1 \beta_t^1(L_{N,t}/\lambda_t), \varepsilon_{N,t})\} \quad (6.3)$$

Clearly, the objective of the paper is to define the counterfactual values of endowments, prices and labor status. Certainly, this is not a minor task and becomes even more challenging when done for African, Caribbean and Pacific countries. In general, figure 6.1 depicts the scheme of methodological framework of GIDD. However, the GIDD framework is likely to have important consequences for economic growth and the distribution of income within a given country. Thus, in an increasingly globalizing world, the direction and magnitude of these changes can be affected by the changing patterns of international flows of goods, services and capital.

Consequently, in order to capture all of these effects in a consistent way, the GIDD can be linked to a global computable general equilibrium (CGE) model to obtain a set of counterfactual prices (factor returns) and quantities (factor volumes). Essentially, these are the link aggregate variables known, as LAVS (Ferreira et al, 2003). Basically, LINKAGE is the CGE model used with the GIDD. Yet, the GIDD micro simulation methodology is compatible with any CGE model that has sufficient factor market detail. Indeed, LINKAGE is a relatively standard CGE model with many neoclassical features. Operationally the model is solved in a recursive-dynamic model in which a series of end-of-period equilibriums are linked with a set of equations that update the main macro variables.

FIGURE 6.1 METHODOLOGICAL SCHEMES: GIDD FRAMWORK



Surely, the three particularly relevant aspects of LINKAGE (for GIDD purposes) are its multi-sectoral nature as well as its detailed treatment of factor markets, international trade and capital flows). Here, the inclusion of multiple productive activities and multiple commodities allow for a rich production and demand structure. Productivity trends are sector-specific as well as factor-specific and are calibrated to be consistent with historical evidence. Again, the allocation of household budget (for a single representative household in each country) across saving and a vector of consumption commodities are determined simultaneously through maximization of an extended linear expenditure system (ELES). Basically, the system captures various substitution possibilities across commodities as well as a gradual shift in demand towards commodities with higher income elasticities (such as manufacturing and services) overtime.

Again, production is modeled in a nested constant elasticity of substitution (CES) fashion to reflect various substitution possibilities across inputs. Clearly, this allows for a rich treatment of factor markets, where returns to factors of production (unskilled and skilled labour, capital, land, and natural resources can be type-specific as well as sector-specific. Therefore, in standard GIDD applications, capital as well as skilled labor is perfectly mobile across sectors within a country; while the market for unskilled labor is segmented into farm and non-farm categories. And within each segment, labor is perfectly mobile across activities, but mobility across segments is limited by a migration function which responds to changes in the farm wage premiums as well as non-farm wage premiums. Notably, the LINKAGE model allows for international mobility of labor and capital as well as changes in the unemployment rate. Here, international trade is modeled using the nested armington specification, in which consumer products are differentiated by region of origin and combined using CES functions. On the supply side, producers allocate output to domestic and export markets according to constant elasticity of transformation (CET) specification. Thus, the global nature of the model means that all countries have some degree of market power; goods and services markets clear at the international level; and global capital flows are balanced. Therefore, the degree of international openness (both trade and capital) affects domestic factor prices directly but also has important consequences for the growth of factor productivity.

In the first application, the GIDD in conjunction with LINKAGE is used to generate a new income distribution for the year 2030 (Bussolo, et.al. 2009). Here, no major policy changes are introduced, and the growth assumptions are based on productivity trends from the past two decades as well as previous country-specific forecasts. Then, the study identifies the drivers of the expected distributional changes by means of two complementary approaches. Initially, the analysis is conducted in terms of the convergence and dispersion components; that is, changes in income disparities between and within countries. As depicted in table 6.1, the results show that the reduction in global income inequality between 2000 and 2030 is the outcome of two opposing forces: the inequality-reducing convergence effect as well as inequality-enhancing dispersion effect.

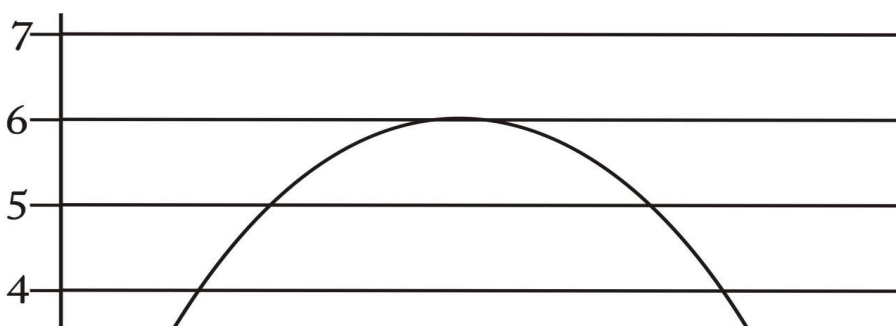
TABLE 6.1: GLOBAL INCOME INEQUALITY

INDEX	2000	2030	DISPERSION ONLY	CONVERGENCE ONLY
GINI	0.672	0.626	0.673	0.625
THEIL	0.905	0.749	0.904	0.749
MEAN LOG DEVIATION	0.884	0.764	0.893	0.759

Now even with significant changes of within-country inequality levels, all the potential reduction of global inequality can be accounted for by the projected convergence in growth rates of average incomes across countries. Again, the aggregate impact of the changes of the within-countries component of inequality appears to be minor. However, specific countries as well as specific households' types within countries may experience large distributional shifts. Yet, the main cause of local inequality changes is the adjustments of factor rewards. Consequently, the developing country members of the global middle class are likely to become an increasingly important group within their own countries. This will increase their political influence and possibly provide continued momentum for policies favoring global integration.

In a related application, the GIDD is used to study the income distribution and poverty consequences of damages from global warming (Bussolo, et-al, 2008). Here, the general equilibrium model with an integrated climate module and links from emissions to global temperature is solved through 2050; while climate change damages to agricultural productivity are calibrated using estimates in Cline (2007). In order to assess the magnitude and incidence of climate change damages, the baseline scenario (which incorporates climate feedbacks to agricultural productivity) is constructed with an alternative scenario where the damage coefficient is set to zero (that is costless mitigation). Clearly, the results show that a temperature increase of approximately one degree **C** above today's levels could raise the 2050 global moderate poverty headcount (two dollars per day poverty line) from 2.85 percent in a scenario with no damages to 3.01 percent when damages are taken into account. However, the limited global impact conceals a wider variation across regions; with increases in poverty ranging from 289, 000 people in Latin America and Caribbean to 6, 200, 00 people in sub-Saharan Africa. Although climate change damages are concentrated in agriculture, the agricultural households are not necessarily the most affected. Because the adverse impacts of global warming are more pronounced in the poor countries located close to the equator; including climate change damages in the analysis results in an increase in the global Gini coefficient. Thus, the widening of inequality between countries is partially offset by the falling within component due to faster growth in the earnings of agricultural households (which tend to be concentrated in the left tail of the national distributions). Clearly, these dynamics give rise to the global growth incidence curve in figure 6.2, which shows the distribution of per capita income gains if climate change damages were zero.

FIGURE 6.2 CLIMATE CHANGE DAMAGES: GLOBAL INCIDENCE



Indeed, the above figure shows the percent change in real income or consumption in 2050 relative to baseline with climate change damages. Because these gains are largest between the second and sixth decile of the global income distribution; households in this part of the distribution are likely to suffer the most from climate change. That is, they have the most to gain if climate change had zero impact on agricultural productivity. However, the challenges of assessing plausible worldwide distributional implications of growth, large shocks as well as policy changes remain daunting. Therefore, the time for action is now.

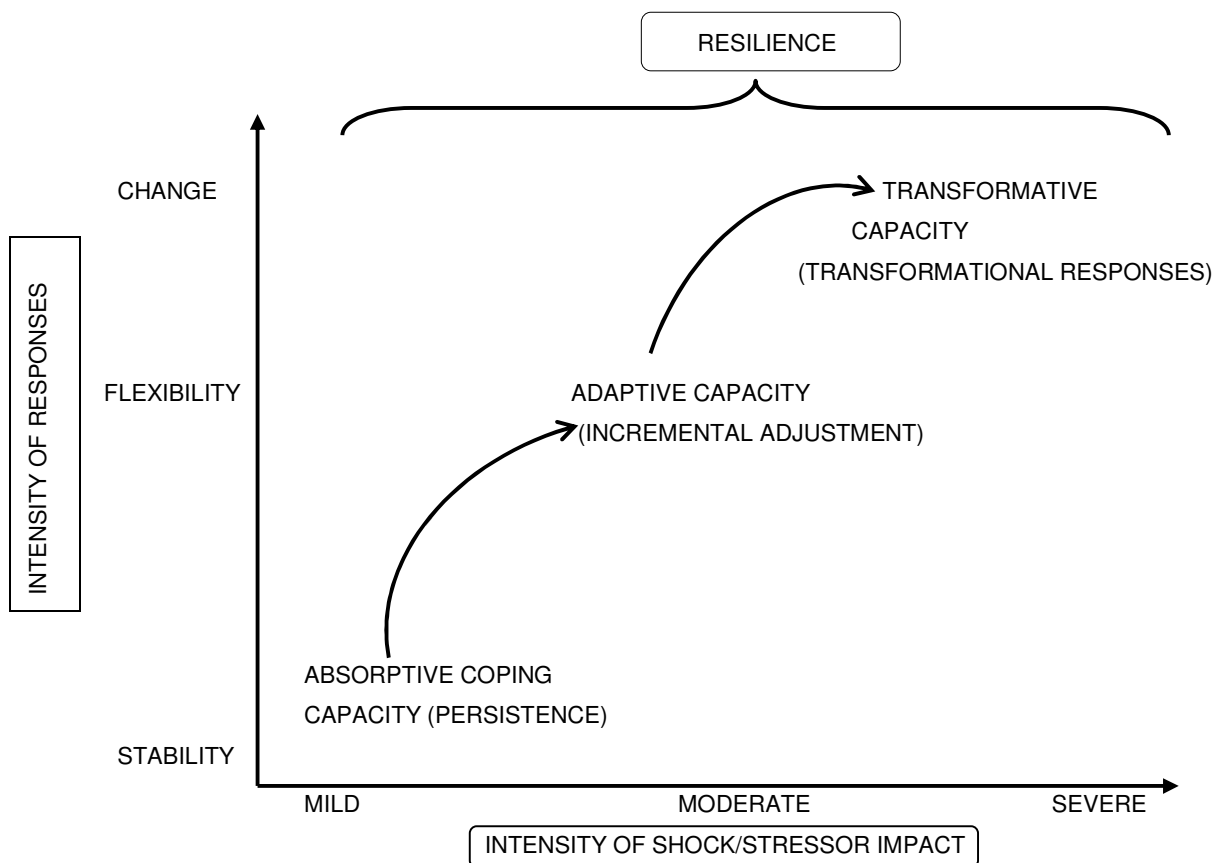
7.0 RESILIENCE POLICY STRATEGIES

Conceptually, resilience consists of three capacities that respond to different degrees of change or shocks: absorptive capacity, adaptive capacity and transformative capacity. The absorptive capacity covers the coping strategies of individuals, households or communities that can be used to moderate or buffer the impacts of shocks on their livelihoods and basic needs. The adaptive capacity is the ability to learn from experience and adjust responses to changing external conditions (while continue operating). In contrast, the transformative capacity is the capacity to create a fundamentally new system when ecological, economic or social structures make the existing system untenable. As shown in figure 7.1, each capacity leads to a different outcome: absorptive capacity leads to endurance for continuity. Similarly, adaptive capacity leads to incremental adjustments or changes while transformative capacity leads to transformational (system-changing responses). Clearly, these three different responses can be linked to different intensities of shock or change in a broadly hierarchical manner (WEF, 2013; Berkes, 2013; Walker, et al. 2004). Here, the lower the intensity of the shock, the more likely the household, community or system will be able to resist it effectively; while absorbing its impacts without changing its function, status or state.

However, when the shock or stressor exceeds this absorptive capacity, individuals and communities will then exercise their adaptive resilience, which involves making incremental changes to keep functioning without major qualitative changes in function or structure. Critically, these adjustments can take many forms such as connecting to new social networks. And yet, if those incremental changes associated with adaptive capacity are not enough to prevent a household, community, or system from avoiding dire circumstances; then a more substantial transformation must take place. Clearly, these changes permanently alter the system or structure in question. Essentially, these changes may not always be positive in the long run; even if they prevent people from falling into acute poverty that puts their access to basic necessities at risk. Yet, at a strategic level, a resilience framework could encourage governments and development partners to maintain resilience as a policy and programmatic objective as well as to coordinate different agencies and sectors to achieve that objective. In fact, a

distinguishing feature of resilience and vulnerability is the potential for complex dynamics. Notably, in vulnerable socio economic environments, individuals, households and communities are likely to experience dynamic fluctuations in well-being; including a mix of long-term trends, cyclical and seasonal shocks as well as major covariate shocks. Furthermore, the transitions from one state (such as chronic poverty) into either better or worse states are likely to be characterized by a range of threshold effects or tipping points.

FIGURE 7.1 RESILIENCE SCHEME: ABSORPTIVE/ADAPTIVE/TRANSFORMATIVE CAPACITIES



Operationally, resilience requires a multilevel or systemic measurement approach and this includes measurement at different levels (individuals, household, community,

ecosystem) and among different socioeconomic (ethnic) groups. Again, this requires an understanding of how these different identities and factors interact. And beyond the household level, systemic factors such as health conditions, social and political relationships, culture, agro-ecological factors as well as macroeconomic conditions may affect resilience. Obviously, these basic principles have important implications for measurement in practice. Therefore, table 7.1 provides a general list of proposed indicators that could be used to measure resilience. Perhaps, the most important prerequisite for resilience measurement is higher-frequency surveys. Essentially, high-frequency measurement is a necessary condition for understanding vulnerability and resilience. Critically, it helps to identify dynamic initial states such as seasonality, cyclicity and exposure to idiosyncratic shocks; differences between pre-shock and post-shock states; complex dynamics of coping and adaptation mechanisms; as well as the key thresholds that may arise in the transitions between initial and subsequent states.

TABLE 7.1 RESILIENCE MEASUREMENTS: PROPOSED METRICS

SN	SAMPLE METRICS	SN	RESILIENCE	INITIAL	SHOCKS	AND	RESPONSES	SUBSEQUENT
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			MEASUREMENT PRINCIPLES	BASIC CONDITIONS	STRESSORS		BASIC CONDITIONS
A	Food and nutrition security	I	High or appropriate frequency	X			
B	Health Index	II	Sensitive to Short-term variation and critical thresholds	X			
C	Assets Index	III	Measures at many levels	X			
D	Social Capital Index		including household,	X			
E	Access to Service Index		community, village, district	X			
F	Infrastructure			X			
G	Ecological Index	IV	High Frequency		COVARIATE		
H	Drought/Flood	V	Intertemporal		COVARIATE		
I	Health Shocks	VI	Dynamic		COVARIATE		
J	Political Crises	VII	Measured at multiple levels		COVARIATE		
K	Price Volatility		from household, Community,		COVARIATE		
L	Trade/Policy Shocks		Village, District, Country level				
M	Illness/Death				IDIOSYNCRATIC		
N	Loss of Income				IDIOSYNCRATIC		
O	Failed Crops				IDIOSYNCRATIC		
P	Livestock Loss				IDIOSYNCRATIC		
Q	Mitigation Strategies	VIII	Measured at multiple levels			X	
R	Coping Strategies		across the systems that affect			X	
S	Adaptation Strategies		food and nutrition security			X	
T	Food and Nutrition Security	IX	High or appropriate frequency				X
U	Health Index	X	Sensitive to intertemporal				X
V	Assets Index		variation and critical thresholds				X
W	Social Capital Index	XI	Measured at many levels				X
X	Access to Services Index		including households,				X
Y	Infrastructure		community, village, district.				X
Z	Ecological Index						X

However, when designing programs to build community resilience, it is important to use framework or a set of principle that can be applied to each context that ensures that interventions are responsive to environmental idiosyncrasies as well as cultural issues. Therefore, resilience requires multidisciplinary thinking and multisectoral approaches. Also, it has to work at multiple levels, linking community institutions and governance with district governance and service delivery as well as national-level policies and strategies. Thus helping sectoral ministries understand and agree on their form of collaboration is a key part as illustrated below:

- (1) SECTORAL (LINE FUNCTIONING) which involves one sector working alone to address a specific problem or need.
- (2) MULTISECTORAL (COOPERATION) which involves two or more sectors bringing their separate sectoral expertise to address an issue
- (3) INTERSECTORAL (COLLABORATION) which involves two or more sectors trying to understand each other's methods and approaches in addressing an issue through joint planning and some resource sharing.
- (4) TRANS-SECTORAL (INTEGRATION) which involves pulling together resources, personnel, strategy and planning.

Indeed, community resilience is an outcome which is about a community's ability or capacity to anticipate, respond to, cope with, and recover from the effects of shocks and stresses without resorting to behaviors that negatively affect well-being or compromise its long-term prospects of moving out of poverty and hunger. Thus, preventing any major crises requires communities to analyze the crises' underlying causes as well as be involved in the design and implementation of initiatives to address those problems. Therefore, these guiding principles may help make resilience program design more practical:

- (1) Undertake systemic risk analysis including analysis and planning for future uncertainty and worst-case scenarios.
- (2) Reduce the causes of vulnerability by building assets and supporting sustainable livelihoods.

- (3) Address drivers of inequality
- (4) Build up communities' absorptive and adaptive capacities, including better access to safety nets and social protection.
- (5) Support enhanced capacity for effective and timely emergency responses.
- (6) Build institutions for governance while instill a culture of innovation and learning.

In general, the institutional, financial and conceptual walls separating the worlds of development as well as humanitarian assistance within donor and UN agencies need to be broken down to achieve greater synergies in strategies and implementation plans. Again, broader policy coherence for development is a key requirement for efforts to strengthen resilience. Here, policies that undermine resilience must be revised. To support a pro-poor resilience approach, policy makers should be able to create multi annual, flexible mechanisms and funding that facilitate multisectoral approaches to tackling chronic sectoral crisis as well as addressing the structural causes of the crisis at the regional and country level. Again, the government should review the effectiveness of early warning systems in order to identify and address the key institutional (especially political) obstacles to early action. Subsequently, they should put in place policy responses to the lessons learned from such a review or reviews. Donors should also direct more development funding to disaster risk reduction and resilience-building interventions (including better-targeted productive safety nets) with either clear percentage targets or other funding weighting criteria applied. They should also ensure that policies and programs draw on a wide range of expertise such as collaborative, multiagency and multisectoral problem analysis. In fact, national governments should support the emergence of multi-stakeholder platforms and make active use of such forums. In particular, people suffering from a lack of resilience to shocks and stresses that affect their security should be consulted. It is essential that wherever possible, efforts to strengthen resilience should build on the empowering mechanisms and institutions suggested.

Obviously, a resilience perspective can encourage development programming that factor in uncertainty and volatility as well as humanitarian programming that works

toward sustainable development. Here, some programs can incorporate both objectives by:

- (a) Providing relief and then seeking to gradually build individual, household, and community assets; or by
- (b) Building assets in normal times but incorporating financial and operational flexibility into programs to allow them to switch quickly to relief operations when shocks hit.

Critically, development programs aiming to enhance resilience should build local capacities and strengthen local structures. Surely, it is those structures that have the potential to develop the most effective and timely support when shocks and stresses strike. Here, emergence programs should not work in parallel with these structures but rather work with and build on them to avoid locking communities as well as countries into a humanitarian approach. Indeed, nongovernmental organizations and their national partners should use their long-term experience in development programming more proactively to lobby for resilience-enhancing policy change. Consequently, building resilience and reducing inequalities need to become national priorities and hence be embedded in national development plans or strategic frameworks.

Finally, the central objective of any future ACP cooperation should be poverty reduction and ultimately its eradication; sustainable development; and progressive integration of ACP countries into the world economy. In this context, cooperation framework and orientations should be tailored to the individual circumstances of each ACP country; should promote local ownership of economic and social reforms as well as the integration of the private sector and civil society actors into the development process. Any cooperation should also refer to the conclusions of the United Nations Conferences as well as to the objectives, targets and action programmes agreed at international level and to their follow up as a basis for development principles. It should also refer to the international development cooperation targets and paying particular attention to putting in place qualitative and quantitative indicators of progress.

8.0 CONCLUSION

Indeed, after 2015, we should move from reducing to ending extreme poverty as well as ensuring that no person is denied universal human rights and basic economic opportunities. Thus, we should design goals that focus on reaching excluded groups such as by providing social protection to help people build resilience to life's uncertainties. Surely, we can be the first generation in human history to end hunger and ensure that every person achieves a basic standard of well being. Therefore, this is a universal agenda for which everyone must accept their proper share of responsibility. We believe that these changes are right, smart, and necessary thing to do. But their impact will depend on how they are translated into specific priorities and actions. Clearly, we believe that these fundamental shifts can remove the barriers that hold back, and end the inequality of opportunity that blights the lives of so many people on our planet. At long last, they can bring together social, economic and environmental issues in a coherent, effective and sustainable way.

Certainly, this is a world of challenges, but these challenges can also present opportunities, if they kindle a new spirit of solidarity, mutual respect and mutual benefit (based on our common humanity and Rio principles). Here, such a spirit could inspire us to address global challenges through a new global partnership; bringing together the many groups in the world concerned with economic, social and environmental progress. It also include people living in poverty, women, young people, people with disabilities, indigenous and local communities, marginalized groups, multi lateral institutions, local and national governments, businesses, civil society, private philanthropists, scientists and other academics. Notably, these groups are more organized than before, better able to communicate with each other, willing to learn about real experiences as well as real challenges in policymaking committed to solving problems.

Ending poverty is not a matter for aid or international cooperation alone. It is an essential part of sustainable development, in developed and developing countries. Here, developed countries have a great responsibility to keep the promises they have

made to help the less fortunate. Although, aid is vital to developing economies, they still need more other assistance. In fact, developed countries can co-operate more effectively to stem aggressive tax avoidance and evasion as well as illicit capital flows. Here, governments can work with business to create a more coherent, transparent and equitable system for collecting corporate tax in a globalized world. On one hand, they can tighten the enforcement of rules that prohibits companies from bribing foreign officials. On the other hand, they can prompt their large multinational corporations to report on the social, environmental and economic impact of their activities.

In the same way, developing countries have a vital part to play in the transformative shifts that are needed. They must make smart choices to turn cities into vibrant places full of opportunities, services and different lifestyles (where people want to work and live). Therefore, pursuing a single sustainable development agenda is the right thing (smart thing) and necessary thing to do. Yet, freedom from conflict and violence is the most fundamental human entitlement as well as the essential foundation for building peaceful and prosperous societies. At the same time, people want their governments to be transparent, accountable and responsive to their needs. Thus, capable and responsive states need to build effective and accountable public institutions that support the rule of law, freedom of speech and the media, open political choice as well as access to justice. Therefore, we need a transparency revolutions as well as governments that tackle the causes of poverty, empower people and permit scrutiny of their affairs.

Basically, most of the money to finance sustainable development will come from domestic sources and therefore countries are urged to continue efforts to invest in stronger tax systems, broaden their domestic tax base and build local financial markets. But developing countries will also need substantial external funding. Although aid remains vital for low-income countries (such as ACP countries), the most important source of long-term finance will be private capital, coming from major pension funds, mutual funds, sovereign wealth funds, private corporations, Development banks, as well as other investors (including those of MICs). In fact, these private capital flows will grow

and become less prone to sudden surges and stops, given that the global financial system is stable and well regulated. Again, the financed projects should be backstopped by international financial institutions.

However, if the newly suggested development agenda is to be truly transformational, there are several major risks to be managed. Consequently, the development partners should ensure that proposed sustainable development agenda is not over-loaded with too many priorities. Again, to ensure that the new agenda is not past-focusing, insufficiently stretching, unworkably utopians and non-compelling. Rather, the proposed agenda should be oriented towards future challenges, intellectually coherent as well as compendium of well connected goals. Finally, we urge all nations of the world to acknowledge the fact that spiritual growth in GOD is the basic human foundation for prosperity and general well being.

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