

## Brief for GSDR 2015

# Investing in sustainable development: A perspective on market-based approaches

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### Introduction

Anomalies and risks<sup>1</sup> associated with achieving growth suggest that humanity is heading for increasing instability and multipolar disasters. The question is: are there instruments for alleviating these problems? Should the relevant instruments be market-based, public-based, or both? This brief argues that an effective private-sector model to leverage financing for global sustainable development exists. It assesses the comparative analysis of contingent valuation (CV)<sup>2</sup> versus revealed preferences (RP)<sup>3</sup> methods for environmental conservation to argue that an effective model of collaborative push -" i.e. *insurance-based contractual savings*" is in effect doable for economic, social and environmental sustainability as a quasi-public good<sup>4</sup> between the public and private sectors.

In the world today, millions of people are already suffering from catastrophes and

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<sup>1</sup> A global risk is defined as an occurrence that causes significant negative impact, with potential for systemic failure, for several countries and industries over time a timeframe of up to 10 years.

<sup>2</sup> Contingency Valuation is a method that is used to value specific changes from the status quo. It estimates total value (use and nonuse).

<sup>3</sup> Revealed preference theory, pioneered by American economist Paul Samuelson is a method of analyzing choices made by individuals

<sup>4</sup> A quasi-public good is a good that is easy to keep nonpayers from consuming, but use of the good by one person does not prevent use by others.

disasters of global dimension. Many international agreements to resolve the consequences on human well-being are in place, but these are mostly incomplete and results tepid, with major nations not yet in sync. The United Nations Framework Convention on Climate Change (UNFCCC), for instance, exists even though many aspects such as financing are yet to be finalized.

**Table1. Changing Structure of Global Sustainability Risk-Factors**

|                      |   |
|----------------------|---|
| <b>Economic</b>      | Financial failure, Retrenchment from Globalization, Price Shocks, Damage of cities and industrial infrastructure  |
| <b>Social</b>        | Food and other shortages, Refugees, Disruptions, Civil and interstate wars, Pandemics (health), Overpopulation, Unemployment, Education gaps, Illegal activities, Energy shortages, Social structure breakdown, Extreme poverty and income disparity. |
| <b>Environmental</b> | Climate change, Pollution, Hurricanes, Flooding, Loss of biodiversity, Water and arable land scarcity and other extreme weather events.   |

Source: author

In all, few countries have made progress on emission reduction, loss and damage compensation, and nature restoration (World Bank 2010). The volley of catastrophes indicates a major gap in the global response and urgency for effective policy models to resolve the problems. A snapshot of the catastrophes bears the fingerprints of man-made and natural origins. Table 1 shows that they do consistently create systemic shocks to the well-being of all people on the planet Earth, on a very large scale.

## Empirical Analysis

Invariably, the global insurance industry has over the years availed itself of market-based contingent and contractual savings instruments to global catastrophe management. Insured catastrophe-losses with global destabilizing effects, since 1990 include: Hurricane Andrew (1992); Nothridge Earthquakes (1994); Winter Storm Lother (1999); Attack on WTC (2001); Hurricanes Ivan and Charley (2003); Asian Tsunami (2004); Hurricane Katrina (2005); Hurricane Ike and Gustav (2008), Gulf of Mexico Oil Spill (2010) and Hurricane Sandy (2012). The insurance industry: 1.) reduced losses from these events; 2.) explored mitigation options; and 3.) adopted loss prevention and restoration (paid bills for biodiversity restoration).

Figure 1.: Global Insurance and Sustainable Development



Source: author and Swiss-Re

Surely, the global commercial insurance industry participation in sustainable development worldwide is vast (figure 1). The industry collected additional/progressive premium taxation to the tune of \$800 billion since 2000 to cater, as principal resort, for the increasing catastrophes. About 40 percent of industrial insurance claims are due to crippling catastrophes. As an example, the insurance coverage of the Gulf of Mexico spill is estimated by Swiss-Re at about \$3.6 billion. In a sense, arriving at solutions to catastrophes therefore require long-term thinking that includes *larger* participation of the industry. Both general liability insurance and pollution liability insurance policies will come into play.

Principally, the premium taxes of the insurance industry have gradually adapted to these events, incorporating new elements. The industry penalizes/taxes individual and corporate entities over insured/insurable facilities for any deviation from certified standards, indemnifies premium compliant entities and restores damages through its premium-based contractual savings. In the same vein, the industry shares risk analysis, providing coverage for short-term effects, and avoiding long-term effects. Large multinational insurers and reinsurers are contributing to research and offering products to address extreme shocks.

Picking back up on the CV vs RP analysis for environmental conservation will be helpful here (see Schalde and Payne, 1994). In CV, catastrophes are viewed across long temporal and large spatial scales where disturbances in ecosystems as in the case of Gulf of Mexico spill are not uncommon. Within the CV systems, saving made by businesses cater to the three pillars of global sustainability. In a study entitled (*Investing in sustainable development, the Role of the Insurance Industry*, UNCTAD, (forthcoming), the validity and robustness of the arguments of CV in the insurance industry using Spearman rank order in sustaining development for quasi-public goods<sup>5</sup> was evaluated (see also Richard T. Carson et al (1996)). A strong correlation in the evaluation

<sup>5</sup> Contingent valuation (CV) to revealed preference (RP) estimates are made. Summary statistics of the CV/RP ratios are provided for the complete dataset, a 5 percent trimmed dataset, and a weighted dataset that gives equal weight to each study rather than each CV/RP comparison. For the complete dataset, the sample mean CV/RP ratio is 0.89 with a 95 percent confidence interval [0.81-0.96] and a median of 0.75. For the trimmed and weighted datasets, these summary statistics are (0.77; [0.74-0.81]; 0.75) and (0.92; [0.81-1.03]; 0.94), respectively. The Spearman rank correlation coefficients between the CV and RP estimates for the three datasets are 0.78, 0.88, and 0.92.

suggests there is no much difference between the use of CV or RP for quasi-public goods. The implication is the CV is a robust mechanism that can be scaled up for global sustainable development.

In conclusion, any policy response to the extreme changes in the global economic, social and environmental sustainability as a quasi-public good can be divided in two parts: Certification and Regulation prior to the damages; and preparation for reparation after the damages. While governments actively participate in certification and regulation of various types of activities that affect sustainability, the insurance industry imposes a contractual and demand-driven preparation for reparation through progressive and weighted premiums taxation on risks, the insurance industry principally leverages in contractual savings against the damages that come with extreme events. Thus, the drive for a sustainable development agenda and coincidence of deepening the search for sources of financing the implementation, the commercial insurance industry, invariably, offers a solid market-based opportunity in closing the policy gap.

### Issues for consideration

Despite haven applied the contingent valuation method successfully towards known global disasters, there are pending issues for consideration for policy makers:

- The insurance industry's response is still well short of what is needed. Policy makers need to come up with methods for scaling up the contingent models applied by the insurance companies and rolling out the approach worldwide.
- Policy makers need to come up with additional standards for insurability, for instance in the small Island states—drawn up with the latest climate science and projections on environment in mind.
- National policy makers can also help in certification and regulation for vulnerable communities to make good decisions about

global resource use, infrastructure and building codes, so that they are more resilient when disaster strikes.

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