



# Rapid Impact and Vulnerability Analysis Fund (RIVAF)

## Final Report



This report is a compilation of executive summaries from the research findings of eight projects, which involve the work of eleven United Nations Agencies, conducted and completed under the Rapid Impact and Vulnerability Assessment Fund (RIVAF) between 2010 and 2011. The UN Global Pulse team in New York prepared this final report for publication in March 2012. Full research reports will be available upon request.

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*United Nations Development Programme*  
*United Nations Educational, Scientific and Cultural Organization*  
*United Nations Population Fund*  
*United Nations Office on Drugs and Crime*  
*United Nations World Tourism Organization*  
*United Nations Office for Outer Space Affairs*  
*World Food Program*  
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**About Global Pulse:**

Global Pulse is an innovation initiative of the United Nations Secretary-General, which functions as an innovation lab, bringing together expertise from inside and outside the UN to harness today's new world of digital data and real-time analytics for global development. The initiative contributes to a future in which access to better information sooner makes it possible to keep international development on track, protect the world's most vulnerable populations, and strengthen resilience to global shocks. Visit [www.unglobalpulse.org](http://www.unglobalpulse.org).

**About RIVAF:**

The financial, food and fuel crises in 2008/9 revealed that decision makers had little access to real-time actionable information on how the most vulnerable are being impacted by shocks. To address this gap, the Secretary-General established the Global Pulse initiative. Global Pulse is an innovation initiative in the Secretary-General's Office to harness new sources of data and emerging technologies to detect—in real-time—when populations are changing their collective behavior in response to crises.

The Rapid Impact and Vulnerability Analysis Fund (RIVAF) was launched by the Global Pulse Initiative in December 2009 with support from the UK's Department for International Development (DfID) and the Government of Sweden. The fund supports innovative, real-time data collection and analysis to help develop a better understanding of how vulnerable populations cope with impacts of global crises.

## Acronyms

ARIMA – Autoregressive Integrated Moving Average  
CBMS – Community based monitoring survey  
CFSVA – Comprehensive Food Security and Vulnerability Analysis  
DC – Developing Country  
CREDE – Centre for Research on the Epidemiology of Disasters, Belgium  
ECLAC – Economic Commission for Latin America and the Caribbean  
EFA - Education for All  
EFSA – Emergency Food Security Assessments  
ENCOVI – National Survey of Living Conditions (INE, Guatemala)  
EMIF SUR – Encuestas sobre Migración en la Frontera Sur de México  
FDI - Foreign Direct Investment  
FNSMS – Food and Nutrition Security Monitoring Systems  
GEC – Global Economic Crisis  
GFC – Global Financial Crisis  
GIS – Geographical Information System  
GIVAS – Global Impact and Vulnerability Alert System  
GoG – Government of Guatemala  
HAPPCO - HIV/AIDS Prevention and Control Office  
IADB – Inter American Development Bank  
ICPD – International Conference on Population and Development  
ICT – Information communication technology  
ILO – International Labour Organization  
INE – National Institute of Statistics of Guatemala  
IGN – National Geographic Institute of Guatemala  
INSD – Institut National de la Statistique et de la Démographie, Burkina Faso  
ISIC – International Standard Industrial Classification  
LC – Letter of Credit  
LDC – Least Developed Country  
McRAM – Multi-cluster Rapid Assessment Mechanism  
MOFED – Ministry of Finance and Economic Development  
NBE – National Bank of Ethiopia  
NFP – National Focal Point (UN-SPIDER)  
NGO – Non-Governmental organization  
ODA – Official Development Assistance  
PDA – Personal digital assistant  
PEP – Poverty and Economic Policy  
PLWHA – People living with HIV/AIDS  
RIT – Rochester Institute of Technology  
RIVAF – Rapid Impact and Vulnerability Analysis Fund  
RSO – Regional Support Office (UN-SPIDER)  
SEGEPLAN – Presidential Secretariat for Planning and Programming of the Republic of Guatemala  
SESAN – National Secretariat for Food Security and Nutrition  
SME – Small and Medium-sized Enterprise

SMS – Short Message Service  
SRH – Sexual and Reproductive Health  
ST-EP – Sustainable Tourism – Eliminating Poverty  
TSA – Tourism Satellite Account  
UNDP – United Nations Development Program  
UNESCO – United Nations Educational, Scientific and Cultural Organization  
UNFPA – United Nations Population Fund  
UNICEF – United Nations Children’s Fund  
UNODC – United Nations Office on Drugs and Crime  
UNOOSA – Office for Outer Space Affairs, United Nations  
UN-SPIDER – United Nations Platform for Space-based Information for Disaster  
Management and Emergency Response  
UNTOC - United Nations Transnational Organized Crime Convention  
UNWTO – United Nations World Tourism Organization  
VAG – Visual Analytic Globe  
VAT – Value Added Tax  
WB – World Bank  
WFP – World Food Program

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## Introduction to RIVAF Final Report

*Robert Kirkpatrick*

This final report of the Rapid Impact and Vulnerability Analysis Fund (RIVAF) aggregates the summary findings from a series of studies and research projects, which were undertaken by eleven UN agencies, between 2010 and 2011. The topics represented in these eight research projects, which involve the work of eleven United Nations Agencies, present a unique view of how the global economic crisis has affected a variety of different sectors across the globe.

When the global economic crisis (GEC) peaked in 2009, the international community had been working for almost one decade to achieve the Millennium Development Goals. In many areas, the development community watched as the significant progress began to erode under waves of shocks reverberating from the economic crisis. The GEC awakened many at the global level to two significant challenges; not only were we unable to anticipate where and when global hazards would originate, but we also could not anticipate who they would impact, or how. In addition, there was a realization that the tools available for decision makers to target interventions to protect the most vulnerable were incomplete. Fundamentally, comprehensive information about critical stressors among vulnerable populations was unavailable in a timeline that would allow policy makers to respond with effective interventions.

The Global Pulse initiative was born of the recognition that in order to protect development progress, better, faster information on where populations are being impacted by shocks is required. In 2009, Global Pulse launched RIVAF to encourage UN Agencies to gain an understanding of the impacts of the global economic crisis across various sectors, and to engage in innovative, real-time data collection and analysis around issues of key concern to their agencies. This collection of studies represents the results of that effort.

The work detailed in the short executive summaries in this report truly showcases the United Nations—not only in its geographic spread, but in its cross-sectoral scope. Taken as a whole, the results provide a sobering lesson in the variety of ways that vulnerability manifests in the wake of economic shocks—from increasing crime to the introduction of informal school fees to an increased willingness to undertake unsafe migration. The findings also highlight the variety of populations who are affected—from those dependent on remittances in Colombia, to migrant workers in the tourism sector in the Maldives, to cattle farmers in Ethiopia. The impacts on any one of these disparate populations can provide only a snapshot in time; but taken together, they start to form a fuller picture, one that illustrates the effects of the crisis on “main streets” globally.

Originally we anticipated that we could conduct this research on a short time-scale, within three to five months. However, these types of research projects require time at every stage of the process. Gathering data on populations or institutions whether through surveys or

through partnerships, takes time. Developing frameworks to analyze the data takes time. Operational and administrative issues, such as funding disbursements, hiring surveyors, and communicating between countries, takes time. Understanding these time lags is critical to our ability to strengthen our institutional agility in the future. Therefore, in addition to the very interesting and important discussion of results, we asked our RIVAF partners to detail the challenges to doing this type of research in order to pull out the analytical and operational lessons-learned, towards strengthening our institutional capacity to do impact assessments going forward.

In addition to strengthening our ability to speak for the most vulnerable, many of the outputs from the projects will live beyond these reports. Two of the projects developed on-line portals to facilitate communication or data collection; systems which will be streamlined into regular operations. Further, many of the results are being incorporated into policy and planning, including through UN Development Assistance Frameworks (UNDAFs) in several countries.

Finally, this process opened the door to future work between Global Pulse and UN Agencies. In a partners' meeting in New York, we brought together the researchers from each of these projects. In addition to presenting research findings, we began the conversation about whether and how real-time digital data sources (such as data generated when people access services over mobile phones or information contained in social media) could strengthen these types of projects. We spent two days discussing the significant data gaps faced by researchers and brainstormed how new digital data sources could help fill in those gaps. What we learned from these invaluable discussions is that UN Agencies agree that the promise contained in digital data is enormous, and that they are ready and willing to embark on the learning process required to understand how to integrate new sources of data into their workflow. As an innovation initiative within the UN, Global Pulse hopes to provide the space for our colleagues to do just that.

As we now face the threat of further financial strain across Europe, the relevance of these projects is acutely felt. The Secretary-General's office is strongly committed to continuing to ensure that the voices and concerns of the most vulnerable are heard on the world stage, and to build on the work of the RIVAF projects by designing a twenty-first century monitoring system. We hope that this report represents the first iteration of this effort and that we will see more valuable research in future rounds of the Rapid Impact and Vulnerability Analysis Fund.



## Monitoring Household Coping Strategies during Complex Crises

*United Nations Development Programme and United Nations Children's Fund<sup>1</sup>*

### I. Introduction and Relevance for UNDP and UNICEF

Households cope with unanticipated shocks in a variety of ways by drawing upon individual, community, market and public resources. Although such shocks may be of relatively short duration, an extensive body of literature has shown that, left to themselves, vulnerable households and individuals may cope in ways that adversely affect human development in the long term. Such effects can become more likely during global crises, when many are affected at the same time (*aggregate shocks*), and some forms of community, market and public mechanisms may falter. The current economic crisis is one such episode, as are recurrent episodes of high food and energy prices.

In our study, we first brought together some evidence for impacts on human development occasioned by periods of crises. We then examined the actions – *coping mechanisms* – that households take to minimize the harm from shocks to their wellbeing, by drawing on on-going surveys that document the impact of the current crisis. Apart from their intrinsic interest, such mechanisms are also of importance to policymakers as they link the better observed, macro indicators of a crisis, such as declines in GDP growth, increases in unemployment and falls in export revenues, to longer term negative impacts, such as extended periods of poverty, poorer health, stunted children and decreases in educational outcomes. While many of these longer term consequences may be irreversible, understanding the coping mechanisms that lead to such outcomes may help in identifying observable characteristics that can be monitored for timely assessment of the impact of a crisis at the household level, as well as in devising policy interventions that could forestall negative long term outcomes. In addition, understanding how households cope also helps determine why different individuals within the same household may be affected differently.

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<sup>1</sup> This paper summarizes a research project supported by UN Global Pulse's "Rapid Impact and Vulnerability Assessment Fund" (RIVAF) between 2010 and 2011. Global Pulse is an innovation initiative of the Executive Office of the UN Secretary-General, which functions as an innovation lab, bringing together expertise from inside and outside the United Nations to harness today's new world of digital data and real-time analytics for global development. RIVAF supports real-time data collection and analysis to help develop a better understanding of how vulnerable populations cope with impacts of global crises. For more information visit [www.unglobalpulse.org](http://www.unglobalpulse.org).



## II. Key Findings

Our review of existing work shows extensive evidence of the harmful impacts of aggregate shocks on human development, and is reported in greater detail in the main paper. Going beyond this review, our study proceeds to examine evidence from two countries during the global economic crisis of 2009. We use data collected by our partners in the Poverty and Economic Policy (PEP) network as part of their Community-based Monitoring Survey (CBMS) work. These surveys were conducted in a number of countries including Indonesia, Kenya, Lao PDR, the Philippines, Tanzania, and Zambia. Our work uses the data collected in the Philippines and in Kenya and broadly validates the study of housing level coping behaviour as a sensitive indicator of the impact of the crisis with important implications for both monitoring and policy design.

### *Coping Mechanisms in the Philippines*

Macroeconomic evidence shows that the economic crisis impacted the Philippines through a sharp decline in its exports; and a fall in remittances from overseas workers, particularly those working in the USA. Based on these key channels, an initial scoping study identified 13 *barangays* (wards/villages) most likely to feel the effects of the crisis, as well as indicators to be monitored at the household and community levels. Consistent with the CBMS methodology, all households in the selected sites were included in the survey, thus covering 4,954 households with 21,454 members<sup>2</sup>. The survey was conducted in April 2009, with a reference period from November 2008 to April 2009. When asked directly about any impacts felt from the crisis, a large number of households reported that they were affected by the crisis, with 31.03 per cent reporting no impact or a mild impact and 65.74 per cent reporting a moderate to severe impact<sup>3</sup>.

The survey asked questions about a wide array of coping strategies related to augmenting income (for example through sales of assets, borrowing, or drawing upon savings); changing food consumption (for example through consuming staples only, reducing portion sizes or consuming one's own harvest); and altering the use of education (for example through transferring from a private to a public school, spending less on books and consumables or withdrawing from school) and health (for example through shifting from private providers to government clinics, using generic medication in place of branded options or using alternative medicines). Household characteristics such as incomes, location, composition, levels of education and other features were also recorded.

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<sup>2</sup> It was also possible to keep track of some individual households from a previous survey in 2006 (and earlier for a few *barangays*) and as a result, panel data is available on 2702 households, with one round of pre-crisis and one round of post-crisis data, which will be further analyzed.

<sup>3</sup> Within the 2702 households for which information from 2006 is also available, and which reported a moderate or severe impact from the GFC, there is a small, but perceptible shift in the real *per capita* income distribution functions towards the left, with the effect being especially marked below the poverty line of 18,000 pesos. The self reported impact is thus borne out by changes in the poverty status of households, and we take the self reported impact to be a reliable indicator for inferring coping behaviour occasioned by the crisis.

Table 1 shows the frequency of some of the coping behaviours of interest, both in the aggregate and also by (per capita) income quintiles. This table shows that in all quintiles, households responded to the crisis by adopting some combination of coping mechanisms.

**Table 1: Coping strategies (percentages), by income quintile**

Coping Strategy	Total	Income Quintile				
		Lowest	2	3	4	Highest
At least one food related strategy	85.99	81.85	85.4	85.76	90.3	86.67
At least one education related strategy	25.05	33.17	28.3	24.43	24.44	14.67
At least one health related strategy	60.4	56.85	57.91	64.29	64.44	58.37
Borrowed money	37.34	38.15	41.74	38.26	39.72	28.63
Used savings	13.84	16.44	14.6	12.95	12.69	12.56
Pawned Assets	4.08	2.06	3.92	4.72	5.59	4.05
Sold Assets	2.56	3.62	3.59	2.21	1.93	1.45
Looked for additional work	5.62	5.73	8.72	5.29	5.17	3.12

*Income-related Coping:* Borrowing money is one of the two most prevalent coping strategies, with 37.34 per cent of households reporting borrowing to meet various expenses. Across different income groups, differences were observed in how assets were used to tide over the crisis: the poor are more likely to sell assets while the rich are relatively more likely to pawn. The data also shows (Table 2) that community borrowing (from a friend, relative, neighbor, a cooperative or an NGO) is by far the most common borrowing behaviour, with the lower quintiles relatively much more likely to borrow from the community while the higher quintiles are more likely to borrow from a private source, possibly at higher interest rates. We also see that private borrowing is much more common in urban areas than rural areas.

**Table 2: Households (percentage) borrowing from different sources**

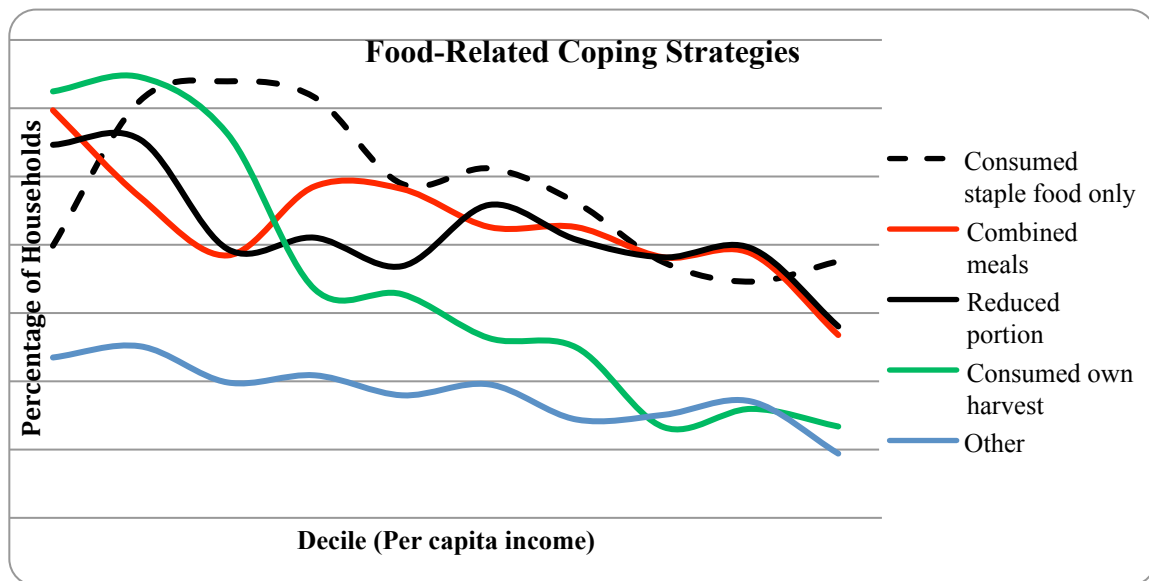
	All (%)	Income Quintile					Rural (%)	Urban (%)
		Lowest	2	3	4	Highest		
Tried to borrow money	38.46	39.88	43.36	39.46	39.92	29.46	38.04	38.91
Borrowed money	37.34	38.15	41.74	38.26	39.72	28.63	36.87	37.85
Community borrowing	21.03	22.19	19.95	22.14	21.02	19.56	20.25	21.85
Private borrowing	11.39	7.10	10.49	13.48	12.79	13.69	5.54	15.18
Others	3.37	2.06	3.42	2.89	4.01	4.85	3.72	3.01

*Food-related Coping:* A large proportion of households (85.99 per cent) used at least one food related coping strategy – with significant differences in those likely to be more common across income groups, as shown in Figure 1. It is quite evident from this that

some strategies appear more likely to be adopted at lower levels of income than others – for example, reducing portions, and consuming staples only.

Each one of these can be quite harmful, especially with respect to nutrition, with potentially severe consequences for the very young, the pregnant, the lactating and those suffering from chronic illnesses such as HIV/AIDS. Moreover, during an extended period, the vulnerability of a household to subsequent shocks as well as the likelihood of long-term negative outcomes can increase as a result of resorting to such methods.

**Figure 1: Food-related coping mechanisms**



*Education and Health-related Coping:* As far as education related coping mechanisms are concerned, 25.05 per cent of households overall reported utilizing at least one such measure. Similar to the food related strategies, education is more likely to be impacted in poorer households. 60.4 per cent of all households have to use at least one health related strategy. Table 3 shows a breakdown of households reporting different degrees of impact from the economic crisis.

It appears that the difference in coping behavior observed across income groups is not a result of differential impact across income groups. The impact of the crisis (at least self reported) is independent of household income level.

**Table 3: Households (percentage) reporting different degrees of impact**

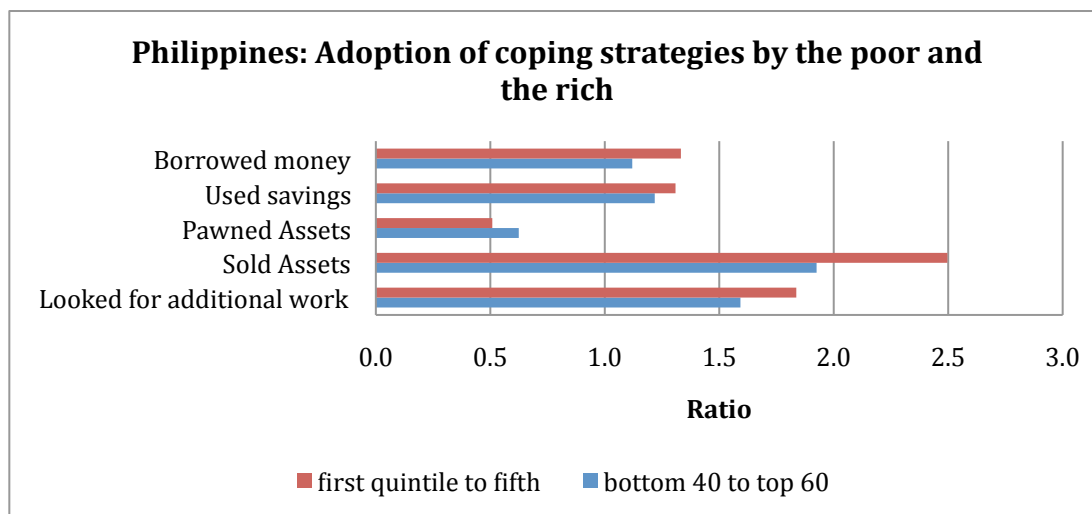
	Total	Bottom		Income quintile				
		40	Top 60	Lowest	2	3	4	Highest
Not + mild	31.03	35.63	28.91	38.56	30.77	27.64	25.51	33.71
Moderate +severe	65.74	64.63	68.31	57.68	68.02	70.16	71.36	63.28

Figures 2 and 3 summarize the relative prevalence of income, food, health and education related coping strategies among the poor and the rich. The red bars show the ratio of the prevalence of a coping strategy among the bottom and top quintile of per capita income. The blue bar shows the ratio between the bottom 40 per cent and the top 60 per cent of the population, by per capita income.

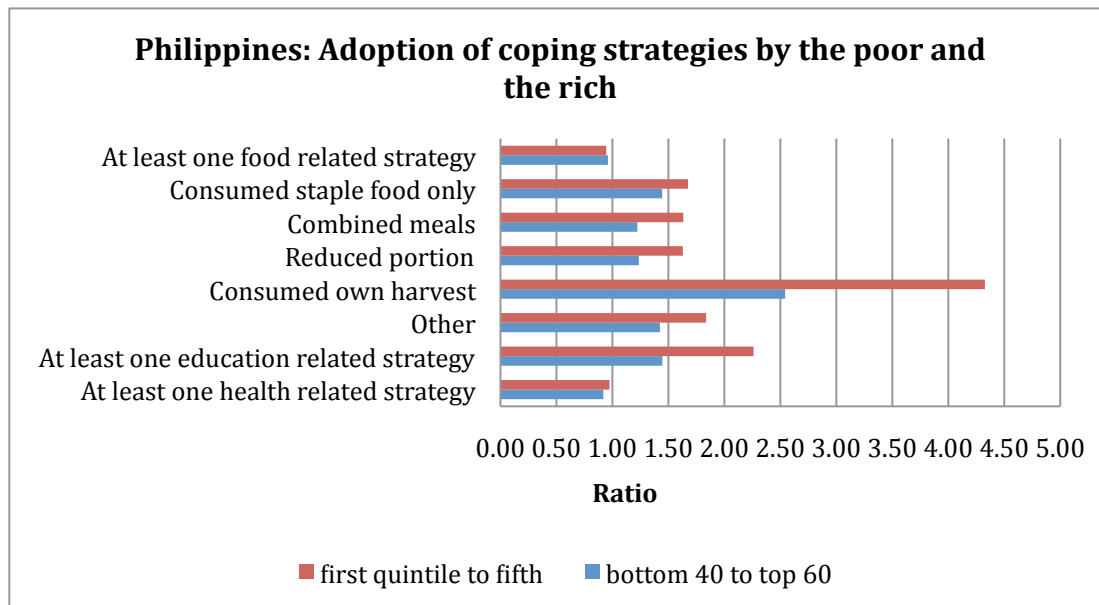
To the right of the bold vertical line are those strategies where the (unconditional) probability is observed to be higher among the poor relative to the rich. Apart from the food-related strategies discussed earlier, we observed that among the poor, education-related coping is more likely and health-related coping is less likely.

The poor appear to already be at minimal levels of expenditure with respect to health-related services. A similar analysis with respect to income-related coping strategies shows that the poor are more likely to rely on selling assets, and looking for additional work.

**Figure 2: Income-related coping across the poor and the rich**



**Figure 3: Coping mechanisms across the poor and the rich**



#### *Coping Mechanisms in Kenya*

The data collection for the study was carried out from July 2009 to January 2010, in Tana River district (one of the poorest districts in Kenya with about 72 per cent of the population living below the poverty line), and surveyed 5,882 households in six sub-locations. One notable characteristic of the region is that many households reported being affected by factors other than the economic crisis - 90.2 per cent by drought, 38.84 per cent by ethnic conflict and so on. In these circumstances it becomes especially hard to determine what part of the coping behavior, if any, can be attributed to the economic crisis.

Notwithstanding such difficulties in attribution (present to some extent in the Philippines as well), the coping strategies follow a broadly similar pattern as discussed above – with differences in relative frequencies, that may be reflecting differences in room to maneuver due to higher levels of continuing poverty.

In Kenya, selling belongings in general and selling belongings specifically to buy food are widely reported coping strategies, reported by 20.59 and 33.40 per cent of households<sup>4</sup> respectively. In addition, 26.28 per cent of households reported a decline in their monthly food expenditure. Common use of food-related coping is one of the many similarities in the behavior of households in the Philippines and Kenya. At the same time, there are distinct and important differences between the two countries, indicating the relevance and importance of country-specific approaches.

<sup>4</sup> This question (Q36) had a different reference period than other questions and asked if the household had sold any belonging buy food over the last one month.

As seen in Table 4, 11.75 per cent of households report borrowing as a coping strategy. Borrowing is more common in higher income quintiles, probably reflecting the borrowing constraints faced by lower income households. The evidence from Kenya shows that it is easier for the upper quintiles to borrow to tide over shocks. A significantly larger proportion of the relatively well-off also seem to have savings that they can spend in times of need. On the other hand, potentially harmful coping behavior seems to be more common in the bottom two income quintiles of households. This was also seen in the Philippines.

**Table 4: Coping Strategies (percentages), by Income Quintile**

Coping Strategy	Total	Income Quintile				
		Lowest	2	3	4	Highest
Decline in monthly food expenditure	26.28	38.87	30.25	18.80	20.09	22.67
Decline in monthly education expenditure	13.29	8.87	7.14	7.63	12.26	12.59
Shifted at least one child from private to public school	4.38	0.68	1.10	1.13	1.79	2.67
Withdrew at least one child from school	1.43	5.63	4.25	3.73	4.09	3.28
Decline in monthly health expenditure	15.93	23.70	15.04	14.64	13.70	11.64
Borrowed money	11.75	6.73	7.90	12.39	13.28	18.19
Used savings	15.60	3.50	6.46	13.08	22.72	32.07
Sold belongings	20.59	13.90	25.23	27.04	20.34	15.60
Sold belongings to buy food in the last month	33.40	40.41	38.57	35.62	29.02	22.67
Sought additional work	3.41	2.05	4.50	3.64	3.23	3.36

The results from the Philippines and Kenya are consistent with the recent emerging literature on the impact of shocks on households. For example Crompton et al (2011) draws together evidence from a number of studies on the effects of the 2007-2008 food price spike. They find that high food prices increased malnutrition in young children, and poverty. They report that nearly all households surveyed reported eating less-preferred food as well as the use of credit and savings as widespread coping mechanisms. Preliminary evidence available from the global financial crisis reaffirms these themes while introducing some new ones.

### *Conclusions*

The evidence received and analyzed thus far indicates that coping mechanisms can indeed provide a fairly sensitive indicator of how households respond to negative shocks; with significant differences between those adopted by the poor and the rich. While there are important country specific differences in the details, it also appears that the poor are more likely to have only a limited number of options, which makes them more prone to

adopting strategies that are likely to result in adverse human development outcomes. Relatively quick surveys may be able to identify the most relevant coping strategies in a particular context, as well as suggesting concrete policy options that may help in mitigating the harmful effects.

The longer such coping measures last, the more likely that there will be long-term negative effects. Moreover, as the shock abates, the speed at which coping measures are wound down becomes an important parameter in determining how quick the recovery from the negative consequences will be. UNDP and UNICEF will remain involved in continuing surveys in these countries to address some of these issues.

### III. Key Challenges

*Unavailability of Baseline Information* - In the absence of a baseline, it becomes difficult to distinguish between regular behaviour and coping behaviour. In the Philippines, CBMS has interviewed a panel of households around the year 2006 and then in 2009. However, the questions related to coping behavior that are part of the GFC (2009) questionnaire are not part of the 'core' questionnaire that was administered in 2006 and 2009. As a result, we are unable to assess how the relative frequency (for example, of using savings) or magnitude (example, the size of loans) of a particular household activity is different from the norm. Moreover, if the relevant behaviour changes seasonally, we have no way of taking this into account<sup>5</sup>.

*Difficulty in Attribution* - In the Philippines, a large number of respondents identified themselves as being impacted by the crisis. This was supported by a shift in the distribution of real per capita income, giving us confidence that the coping (or the part of household behaviour that can be considered coping and not just usual behaviour) was in response to the economic crisis. Households were also asked if they were affected by a number of direct transmission channels such as the loss of a job, decline in remittances, a decline in the frequency of remittances etc. It is puzzling that only 375 households (7.57 per cent) reported being affected by at least one of these direct channels. Either these questions on the direct impacts are missing some channels from the crisis or households are feeling the impact of other shocks. This is hard to determine as no information is collected on price levels or other contemporaneous shocks. Finally, the criteria for choosing the 13 sentinel sites are not very clear. In fact, collecting data at other sites, not expected to show impacts from the crisis, would have provided useful control group data. In the case of Kenya, it is difficult to determine the nature of shocks that the household is reacting to. As seen above, the survey responders reported being subject to drought, conflict and a number of other shocks. There was no specific question on how they were affected by the economic crisis.

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<sup>5</sup> According to the FAO, for the Philippines, "the wet-season rice crop in the north lasts from June to November and the dry-season crop from January to May-June. In the south it is the reverse: wet-season crops last from October-November to March-April and dry-season crops from May-June to November". It is therefore plausible that at least some of the households in the sample would have resorted to coping behaviours as a matter of routine in the agricultural lean season. However, we are unable to identify the relative contribution of this factor to the observed behaviours.

*Intensity of Harmful Coping* – Food-related and education-related coping—each with its own long-term consequences—are commonly observed. It would have been more informative if the frequency of such behaviour had been noted. For example, the impact on a household that reports eating less-preferred food once or twice in the last six months feels it very differently than a household that reports doing this repeatedly in the last six months. Similarly, the frequency of other coping, such as how often school is being missed by children, matters.





**Monitoring The Implications of the Global Financial Crisis on Primary Schools, Teachers and Parents in 12 Countries**  
*UNESCO, Division for Planning and Development of Education Systems, Section for Policy Advice and ICTs in Education*

**I. Introduction and Relevance to UNESCO**

This study examines the implications of the global economic crisis on school conditions and resources by researching how primary schools, teachers and households adapt and cope with global crises. While there are numerous studies on the effects of macroeconomic shocks on households and the demand for schooling as well as on public education, less has been done on how macroeconomic shocks trickle down to schools and education delivery. In the immediate aftermath of a global shock, national and cross-national data for monitoring the impact and long-term education implications are not available. This study seeks to fill that gap by interviewing primary schools, teachers, and pupils' household to examine (1) changes in teaching and learning conditions in the years before and after the 2008/9 crisis; (2) respondents' perceptions of how the global economic crisis impacted them, their schools and their households; and (3) how respondents coped with changes. The study also explored the implications of the crisis on teachers and parents' households.

The study complements initial exploratory research conducted by United Nations Educational, Scientific and Cultural Organization (UNESCO), which examined the early consequences of the crisis by reviewing education budget amendments, government documents, policy speeches, official decrees and circulars, journal and press news as well as expenditure data for twelve countries. Furthermore, it is within UNESCO's mandate of assessing global progress towards achieving the six Education for All<sup>6</sup> (EFA) goals. It also builds and strengthens UNESCO's research agenda on education financing, particularly in contexts of economic crises.<sup>7</sup>

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<sup>6</sup> Education for All goals include (1) expanding early childhood care and education; (2) providing free and compulsory primary education for all; (3) promoting learning and life skills for young people and adults; (4) increasing adult literacy by 50 per cent; (5) achieving gender parity by 2005 and gender equality by 2015; and improving the quality of education.

<sup>7</sup> More than twenty years ago, UNESCO played an important role in understanding the consequences for education and training of the widespread economic problems seen in the late 1970s and 1980s and the structural adjustment policies they stimulated. In 1989, the ILO and UNESCO established a Task Force on Austerity, Adjustment and Human Resources, which facilitated policy-oriented research to learn from country responses to the financial crisis and economic reorganization, with reference to decision-making processes and the institutional contexts of the policies and responses adopted.

*Methodology and Survey Themes:* The study incorporates a comparative case-study approach involving twelve countries: Armenia, Barbados, Botswana, Cambodia, Chad, Jordan, Madagascar, Maldives, Mauritania, Mexico, Paraguay and Ukraine.<sup>8</sup> Surveys were conducted with head teachers, teachers and parent/guardians surveys covering the following themes the following themes:

- *School Conditions and Resources:* This includes information on school financing (including school tuition fees and non-tuition fees charged by schools),<sup>9</sup> facilities, pupils, staff, the learning environment and school climate, and safety;
- *Employment Issues:* This includes head teachers' and teachers' contract type, their work schedule and workload, their salary source, payment of benefits and allowances, payment delays, additional jobs and income, and professional development. It also includes employment issues for parents, such as changes in their labour force participation, employment status and economic activity of their establishment;
- *Child Schooling:* This includes primarily issues of child labour
- *Household Income and Expenditures:* This primarily covers households' coping strategies.

A total of 297 primary schools were visited in the twelve countries, representing an average of 25 schools per country. Research teams in the twelve countries conducted 4,282 surveys total, with 292 head teacher, 2,556 teachers and 1,434 parent/guardian surveys completed.

## II. Key Findings

Throughout the years of the financial crisis, there were observed school-related changes in some countries and not in others. In addition, the impacts detected varied across countries. The full report delves into many of these nuances; however, by far the most consistent findings across the twelve countries pertain to school financing, related in particular to changes in school fees, difficulties that parents face paying fees, and schools' budgetary coping strategies. Issues of school financing are among the most critical impacts, as they challenge directly the goal of universal free primary education, emphasized both in the EFAs and the Millennium Development Goals.

In six of the twelve countries examined, no major post-crisis change was observed in the amount of school fees being charged. However, four of these six countries reported relatively high numbers of schools already charging tuition and non-tuition school fees before the crisis. In Botswana, Chad, Madagascar and Mauritania, for example, between 50 per cent and 100 per cent of respondents say their schools charge tuition fees in 2010.

In Armenia and Cambodia, the situation looks alarming: Head teachers, teachers and parents consistently report that tuition fees are increasingly being charged by schools. In Cambodia, there is an annual increase of about 25 per cent of the schools charging tuition

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<sup>8</sup> While UNESCO developed the study's design, surveys and sampling frame, the fieldwork, data collection, data entry and analysis was done with research partners in each country.

<sup>9</sup> School tuition fees are those fees paid by parents or families for their children to attend school, whereas non-tuition fees are charges that schools might demand for extra-curricular activities, sports, provision of uniforms, etc.

and non-tuition fees. In Armenia, responses varied between head teachers, teachers and parents. The number of parents saying their children's school expected school tuition payments increased 23 per cent annually between 2007 and 2010, whereas there was only a 7 per cent annual increase in the per cent of teachers saying schools expected tuition payments. Nevertheless, respondents are consistent in indicating that around half the schools in Armenia charge tuition fees. Non-tuition fees are apparently not prominent in this country.

The only countries where school tuition fees declined are Jordan and Mexico. In Jordan, for example, between 50 per cent and 60 per cent of respondents say schools expect them to pay for their child to attend, an average annual decline of 8 per cent or slightly more compared with 2007. Tuition and non-tuition fees declined in Mexico, albeit slightly, as reported by all respondents except for head teachers. In this case, it is interesting to note that the decline in schools charging fees might be due to observed increases in actual school budgets, particularly from local and federal governments.

According to head teachers and teachers, the number of pupils having difficulties paying tuition fees increased in about half of the countries' schools and classes. The crisis years seem to have exacerbated pupils' financial difficulties in Armenia, Chad, Jordan, Madagascar, Mexico and Paraguay, where the number of pupils demonstrating difficulties increased by about 15 per cent annually, on average, between 2007 and 2010. In some of these countries the rate of change is high but the actual numbers are still low. In some countries, however, such as Jordan and Madagascar, an average of 42 and 149 pupils per school respectively had difficulties paying tuition fees in 2010. If these children were to drop out of schools, as sometimes occurs when households are facing financial difficulties, entire primary education classes would vanish.

Parents' claims are more categorical than head teachers and teachers' in relation to increased household difficulties paying tuition in the year after the global financial crisis. In all countries except for the Maldives and Jordan, the percentage of parents reporting difficulties paying school tuition fees increased in more than 5 per cent annually, with an annual increase of 20 per cent in Barbados and Cambodia and the highest increase of 57 per cent annually observed for Mexico's parents. In some cases (particularly Madagascar but to a lesser extent Armenia, Jordan and Mauritania), the increase is less notable, but the overall numbers are high, resulting in more than a third of the primary schools parents strained to afford their children's primary schooling. In Chad, the change in parents' difficulties affording to school fees were low; however 88 per cent reported facing difficulties in all four years examined.

For the majority of the 4,282 respondents (with the exception of 18 per cent of head teachers and 43 per cent of teachers), school financing issues were considered most important before other issues related to pupils, staff and the school learning environment. Parents' and head teachers' perceptions point to financial difficulties as being the most significant impact of the global economic crisis. Percentages range from as low as 31 per cent of parents in Barbados to as high as 96 per cent of head teachers in Mauritania. To a lesser extent, another perceived impact is pupils' increased difficulties paying fees.

Increased school fees are highlighted by more than a fourth of respondents in Armenia and a third of teachers in Cambodia, countries where the before and after data show consistent increases in schools charges.

Like households, schools have to cope with external or internal challenges to their day-to-day operation. Income generating strategies such as seeking additional funding from the community ranks first in head teachers and teachers' perceptions on the budgetary coping strategies taken by schools. This is particularly the case in Barbados, Botswana, Cambodia, Maldives and Paraguay where 22 per cent to 70 per cent of respondents reported that seeking resources from the community was the primary strategy—in all these cases this was higher than any other category. It remains unclear if seeking resources from the community primarily includes tuition fees from households, as appears to be the case, or if it also includes other larger yet proximate social groups. In Chad and Madagascar, charging non-tuition fees is the coping strategy most used by schools, as perceived by the majority of teachers.

Findings from the qualitative and quantitative school surveys in these twelve countries consistently showed that seemingly global financial difficulties do indeed become local and micro, reaching the level of schools, individuals and families. To cope with the context of extended global crises, schools appear to be charging user fees despite global advocacy and national legislation promoting free primary education. In the absence of other buffers against difficult economic times, charging fees seems to be a default school coping strategy in the context of budget-strapped governments.

### III. Key Challenges

It is worth noting some of the implementation challenges of the research. In some countries, the data to build the school sampling frame was outdated, as the national education statistics were at least two years old. The list of schools sampled thus had to be revised and adjusted during the fieldwork. Challenges that arose during the fieldwork relate to:

- *Obtaining Permits to Visit Schools:* To conduct fieldwork and any type of data collection in schools, education authorities often request an official permit, obtained after the researchers submit a research application describing the study and methods. Although UNESCO facilitated the processes (which could otherwise have been even lengthier), the process delayed the actual data collection stage, in some countries putting the activities off by about two months.
- *Visiting the Sampled Schools:* Unresponsiveness and difficult access to the schools was another major obstacle. Despite having permit letters from the authorities concerned, many of the schools refused to engage in the study. Hence, it was not possible to comprehensively survey the initial sample during the first round of fieldwork, forcing researchers to look for other schools and extend the fieldwork period. Another difficulty was the physical access to some sampled schools, as was the case in Madagascar.
- *Respondents' Quota:* One of the most general obstacles faced by researchers was to engage with schools that did not have a big enough sample of teachers or

- parents (this was mostly the case in small, rural schools), which resulted in visiting more schools than planned in order to fulfil the quota.
- *Survey Administration:* While for most countries the surveys were administered and filled in with the researchers' presence, in few other countries researchers were asked to leave the surveys with head teachers and collect them back at a later date. The following difficulties arose: head teachers forgot to distribute the surveys to teachers, teachers were allowed to take the surveys home but forgot to bring them back, or surveys were not ready when researchers were scheduled to collect them.
  - *Data collection interruptions:* In many occasions, school visits had to be rescheduled because of school holidays, national elections, cyclones or other events that disrupted instruction and, therefore, the scheduled visits.
  - *Respondents did not identify with some questions:* This was mostly common in public schools, where head teachers and teachers did not deal directly with changes in the school budget and allocation of financial resources, simply because schools generally do not manage a budget. In public schools, resources are allocated by governments in the form of teacher salaries or school supplies; head teachers manage petty cash. In other cases, questions were not always fully understood without the guidance of the surveyors, which required surveyors' presence throughout the data collection stage.

Data entry was done electronically, using online surveys developed and facilitated by UNESCO. Some countries selected for the study faced important problems to access stable Internet connections and the necessary equipment to properly engage in the online data entry process. In Chad and Madagascar, for example, UNESCO coordinated with other local UN agencies to facilitate access to Internet.



## **The Global Financial Crisis in Colombia and the International Conference on Population and Development (ICPD) Agenda**

*United Nations Population Fund - Colombia*

### **I. Introduction and Relevance of the Research for UNFPA Colombia**

The United Nations Population Fund (UNFPA) in Colombia implemented the RIVAF project in order to identify and analyze the effects of the recent financial crisis on issues related to the International Conference on Population and Development (ICPD) Agenda in the areas of sexual and reproductive health, gender equality and linkages between population dynamics and development. This project focused on four critical areas, including examining impacts on (1) the overall macro-economic landscape; (2) overall migration and remittance patterns; (3) sexual and reproductive health (SRH), with a special emphasis on interlinkages with migration and remittances; and (4) youth. Most of the research was completed using existing data sources, including in particular from the National Statistics Office and the Central Bank. Because up-to-date data was not available for SRH-related issues, household focus group discussions were conducted in Eje Cafetero, a region in Colombia that was particularly affected by the crisis.

In accordance to UNFPA mandate, this project builds on socio-demographic data to improve the understanding of social dynamics and provide evidence to further engage in policy dialogue regarding ICPD agenda. In addition, this work has provided key inputs into UNFPA's country programming, the details of which are currently under negotiation with the national government.

### **II. Key Findings**

As a whole, the Colombian economy was not dramatically affected by the economic crisis. However, for those regions dependent on remittances, the effects were dramatic. After the global economic crisis, the Colombian economy experienced rapid decline of Gross Domestic Product (GDP), but also a rapid recovery. The National Government's income was not heavily affected during the crisis<sup>10</sup>, partly because of the privatization of public assets which brought additional revenue, nor was the general public budget or the allocation of resources to health and education.

While the GDP did not contract, growth rates were slowed. GDP grew 6.9 per cent in 2007, but in 2008 growth was 3.5 per cent, and in 2009 growth rates were a pale 1.5 per cent. The trend was reverted in 2010, when the economy grew 4.3 per cent and preliminary data for 2011-1Q indicate a 5.1 per cent growth over the same period in 2010. The initial rapid slowdown had a direct impact on unemployment. In November 2007, prior to the crisis, Colombia experienced a one-digit unemployment rate (9.8 per cent) for the first time in more than decade. From that point on, the unemployment rate

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<sup>10</sup> Banco de la República (National Bank), statistical series – public finances. 2011.

rose to a maximum of 13 per cent in February 2010. This trend has reversed, and unemployment rates are expected to return to single-digit rates by 2011-4Q. However, the increasing unemployment during the crisis hit women more than men, and especially youth. Some 214,000 women (3 per cent of the female labor force) left the labor market during the fourth 2008-4Q, most of them between 18 and 26 years old<sup>11</sup>. The adverse impacts on unemployment, together with high inflation, slowed down advances in poverty reduction and pushed down net household incomes.

Alongside this trend, as a result of the severity of the crisis in the most developed countries, international migration and remittance dynamics were affected. Available data suggests that migration abroad decreased. Remittances, contrary to expectation, initially *increased* before beginning to decrease. This points to a time-gap between the moment of the crisis and its repercussions on remittances flows. Research findings suggest that workers abroad initially use their savings to maintain the flow of remittances. The slow recovery of the American and the European economies have gradually been accompanied by decreasing and unsteady flows of remittances. In extreme cases, our focus groups documented reverse remittances, whereby families took out loans in Colombia to prevent their family members abroad from having to return to Colombia.

It is well established that remittances are largely used for covering basics needs (food, shelter, utilities). Because of regional disparities, the negative impacts of the crisis were unequally felt. Due to its heavy dependence on remittances, the Eje Cafetero region felt the impacts of the international crisis severely. Interview and focus groups conducted in the region pointed to impacts that might not be evident when analyzing statistical data at a national level. Those effects ranged from increased family separation due to economic migration and increased overdue mortgage payments to rising risks of early school dropouts and the suspension of prime quality medical insurance<sup>12</sup>. Perhaps the most visible effect of the crisis in Eje Cafetero is the higher unemployment rates as a consequence of the massive entrance of formerly inactive segments of the population into the labor market in search for a job to replace lost remittances. Many of those entering the labor market used to play the role of caregivers for children and elders. Compared to other comparable regions, SRH advances in Eje Cafetero were slight, including lower reduction of adolescent fertility in the 2005-2010 period and no improvement in infant and child mortality<sup>13</sup>.

This negative outlook is especially significant given the demographic moment Colombia is going through. The proportion of the population of working age (15-64 years) is at its highest in history, indicating lower dependency ratios. This situation, known as demographic window, is widely considered a unique opportunity to foster development and social well-being as it tends to increase savings and investments in human capital. The crisis hit the country while the demographic window was reaching its final stage, decreasing the opportunities for work, education and health of the youth; thus, dampening

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<sup>11</sup> RIVAF Project calculations based on National Continuous Household Survey by the National Statistics Institute.

<sup>12</sup> See RIVAF Full Report for in depth analysis.

<sup>13</sup> Based on 2010 Demographic and Health Survey results.

the opportunity for the country to fully convert the demographic window into a demographic bonus.

### **III. Key Challenges**

Due to the low intensity of the crisis in Colombia, the most severe impacts were virtually invisible to statistic data sources. Although some key time series reveal changes in trends, those are small enough to be considered as natural process variation.

Most of the sources used to follow up Sexual and Reproductive Health (SRH) indicators are either outdated with regards to the crisis period (i.e. the vital statistics) or are inclusive of a greater period of time (i.e. Demographic and Health Surveys). Because of this, costly qualitative surveys are required with results that are hardly considered valid for whole of the country.

Financial information for the health sector is extremely sensitive because of the National Health System structure. The annual implementation of the Resource Flows Survey has revealed the unavailability of data and the lack of interest from stakeholders to publish them. Examining health expenditure thus remains a challenge. While alternative sources are available, the robustness of the data is in question.





## Study on the Human Dimensions of the Financial Crisis in Ethiopia

*United Nations Population Fund-Ethiopia*

### **I. Introduction and Relevance for UNFPA- Ethiopia**

The study was carried out between February and April 2011 to assess the economic and human dimensions of the global economic crisis in Ethiopia. The research focused in particular on the International Conference on Population and Development (ICPD) mandate areas including sexual and reproductive health (SRH), gender and HIV/AIDS, data gaps, and new challenges posed by climate change.

The study covered a representative sample drawn from pastoralist areas, urban centers, emerging regions and the larger regional states of the country. A total of 1,200 households were sampled for the study for both the qualitative and quantitative phases. Particular considerations were made to include vulnerable groups especially young girls, women and children, populations living in food insecure and vulnerable regions, and vulnerable communities in urban and rural areas.

### **II. Key Findings**

The economic sector was examined from the perspectives of trade and financial flows, which were widely considered to be two of the major transmission channels of the economic crisis' impacts on Ethiopia. These findings are largely based on official data from the National Bank of Ethiopia (NBE) and the Ministry of Finance and Economic Development (MOFED). Key findings include:

- The overall impact on the economic growth of the country can be seen in terms of the slight slowdown in GDP growth. GDP growth declined from 11.8 per cent in 2007/08 to 10.0 per cent in 2008/09 and to 10.4 per cent in 2009/10 (MOFED, 2011). It is, however, expected to pick-up to 11.0 per cent in the current fiscal year.
- A contraction in export earnings have been recorded due to the declines in volumes of some trade items and declines in international prices of major export commodities; this was, however, mostly offset by increases in volumes of some products like oilseeds and flower (NBE, 2008 to 2010).
- Imports have also been impacted by the crisis, although this varied dramatically by the type of good. While imports grew by a much significant rate between 2006/07 and 2007/08, the growth was only modest between 2007 and 2008 and 2008/09. Import of semi-finished goods such as fertilizer has declined (-10.4 per cent) as well as the import bill of fuel, which declined by -22.5 per cent between 2007/08 and 2008/09, with a further decline in 2009/10. The ratio of imports to GDP also declined in 2008/09 (NBE, 2008 to 2010). The EFY2009/10 marked a moderate

increase in imports compared to the EFY 2008/09. For some items such as raw materials and semi-finished goods, imports were still lower than their pre-crisis level.

- In regards to government revenue and expenditure, while the overall trend remains positive, declines in growth have been recorded (MOFED, 2011). On the revenue side, although total revenue increased by 37.6 per cent in 2008/09 due to increase in external grants, the following fiscal year it registered a much slower annual growth rate (21.3 per cent) due to decline in external grants and non-tax revenue (MOFED, 2011). Given the slower growth in government revenue, public expenditure also grew at a less sustained but still increasing rate. Both current and capital expenditures increased compared to the preceding year, but at a lower rate.
- The impact on external revenue streams, including remittances, official development assistance (ODA) and Foreign Direct Investment (FDI) was also assessed. A slight decrease in remittances was recorded. Although ODI showed a decline at the start of the crisis, it has picked up in the current fiscal year (NBE, 2008 to 2010). Similarly, although FDI showed a decline during the crisis period, this may not be directly attributed to the financial crisis.

This research also looked extensively at impacts related to health, education and other basic services including access to sexual and reproductive health services, and care and treatment for those affected by HIV/AIDS. Overall, the study showed no significant adverse impact:

- The global economic crisis has not had an impact on access to education at the household level.
- The crisis has not had an impact on access to health services at the household level.
- With regard to services specific to women, such as reproductive health services, the crisis did not affect this health sub-sector, which still provides most services free of charge.
- During the period of the crisis, a reduction in aid and support to various associations and HIV/AIDS Prevention and Control Office (HAPPCO) offices has been noted. This may bring about adverse impacts on important services such as care, treatment and support to people living with HIV and AIDS.
- The surge in inflation over the past two years, coupled with an increase in the number of people seeking modern health services may in effect increase pressure on the existing infrastructure.

The study examined whether there were any gender-differentiated impacts of the crisis:

- Findings from the household survey show that both men and women were able to access/purchase health and education services hence no significant gender-differentiated impact has been witnessed.
- Interestingly, one trend during the crisis period has been a growth in employment and income for the flower industry, a highly female-intensive sector. Similar outcomes were observed for the hotel and restaurants sector, another female-intensive sector.

The study, in assessing the impact of the crisis on the human dimension, looked into possible effects on income of farmers and livestock producers that were due to the crisis.

The focus here was on the rural population, which represents the farmers/livestock producer (this includes the majority of the poor and vulnerable of the country):

- Crop farming activities have not been significantly affected by changes in international demand and prices for Ethiopian export crops.
- However, rising inflation rates, which have considerably affected their purchasing power, has impacted farmers.
- Livestock farming activities had been negatively affected during the two post-crisis years. International demand for meat and meat products had increased, but demand for live animals and leather and leather products had declined during this period.

### **III. Key Challenges**

In the course of data collection, many challenges were faced: difficulty in accessing government officials; inaccessibility or remoteness of some EAs selected for the assessment; difficulty in finding the respondents without local guides; unwillingness of respondents to be interviewed, particularly those living with HIV/AIDS (PLWHA); and unwillingness of health officials to disclose such information as drug stocks. In some areas, field researchers were denied interviews until they obtained a letter of proof from higher/regional officials, which delayed the data collection process.



## The Impact of the Global Financial Crisis on Reproductive and Maternal Health in Jordan

United Nations Population Fund- Jordan

### I. Introduction and Relevance to UNFPA Jordan

The UNFPA Jordan Office, in collaboration with the Jordanian Higher Population Council jointly conducted this effort to analyze health and poverty indicators that could capture changes in reproductive and maternal health due to the Global Economic Crisis.

UNFPA is currently preparing for its coming cycle of cooperation in Jordan for (2013-2017) within the overall framework of the United Nations Development Assistance Framework (UNDAF). Jordan is classified as a middle-income country (MIC). One of the UN and UNFPA's comparative advantage and best mode of support in a MIC is likely to be in strengthening early warning systems and mechanisms to ensure that disparities and vulnerabilities are quickly and effectively addressed. Hence this research was timely, and provided an opportunity to assess whether the global economic crisis had an impact on the reproductive health in Jordan, and whether the existing data and information systems were able to detect and flag such impact if it did happen.

The research examines the crisis itself and its effects on reproductive health at four levels: a) the macro level, addressing changes in annual budgets for the health sector and possible repositioning of the health sector relevant to other sectors; b) at the health system level; c) the health service level, and d) the demand side and health seeking behaviours of individual users in local communities. The study period was for the 2007-2009.

### II. Key Findings

In response to the anticipated effects of the crisis on the economy, the government increased its public debt in the short-term. While increase is significant, compared with other countries, the level of public debt measured as a share of GDP is low.

Using indicators commonly used to measure the affect of the crisis, and comparing the indicators for 2007 and 2009, the crisis appears to have had little *short-term impact* in general, and on maternal and reproductive health indicators in particular. In summary:

- *Official development assistance did not decline:* As a moderate country in the region, donors still considered development assistance to Jordan a priority.
- *Government revenues declined:* Revenues declined by 567.5 million Jordanian Dinars (JD) over 2008; however Government expenditures increased by 62.9 million from 2008, preceded by increases of 729.5 million from 2007.<sup>14</sup>

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<sup>14</sup> Central Bank of Jordan "Annual Report 2009"

- *Government funding for the reproductive and maternal health did not decline:* In fact, it has increased steadily from JD200,000 in 2007 to JD500,000 in 2009. However, timely allocation and disbursement is a problem.
- *Household incomes did not decline in nominal terms:* Total average household income increased 22 per cent<sup>15</sup> from 2006 to 2008. However price increases eroded income in real terms and affected client perceptions of ability to afford medical care; inflation rose by almost 10 points from 4.7 per cent in 2007 to 14 per cent in 2008; 2009 saw a 0.7 decrease from levels in 2006, the base year.
- *Unemployment did not increase and workers' remittances did not decline.*
- *Real GDP per capita significantly decelerated during the time period:* On average people did not earn more, while average expenditures rose because of rise in the cost of living. The increase was particularly pronounced for fuel and food prices.
- *Changes in household incomes affected expenditures on maternal and reproductive health care services:* According to focus groups, increases in prices in food, transportation, and education from 2007 to 2008 especially impacted the ability of lower income groups to pay for RH and MH care, many of the respondents were concerned about their expenditures, and some suggested increased reluctance to see health specialists.
- *Statistics on the attendance of health care services do not fully reflect the sentiments of the population:* However, records suggest that some people who were deemed able to pay may have become unable or reluctant to spend money on health care because of the economic crisis.
- *In the absence of sufficiently high rates of economic growth, efforts to cut public debt and budget deficits, will mean one of two things:* (i) Taxes will increase or (ii) government spending will decrease. Both would negatively affect disposable household income, as households will either have a smaller net income or would need to spend more on food, fuel, and health as transfers and government services are decreased.
- *In Jordan, the impact of the crisis was not felt immediately:* As the Jordanian stock exchange did not deal in derivatives, the economy was not directly disturbed by the growing crisis; the effect was due to the response of the government to the perceived threat to the economy. Thus the impact in Jordan was not felt until 2010, a time period beyond the scope of the study.

In brief, the economic crisis may have negatively affected the ability or willingness of some people to maintain pre-crisis levels of spending on health care services in the short term, but this effect was small, if not negligible, and the current information systems were not able to capture this. This finding does not preclude the likelihood of negative impacts in the medium-term; indeed, economic indicators suggest that the full impact of the crisis may only be felt in the medium-term.

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<sup>15</sup> Household Expenditure and Income Survey 2006,2008. Data for 2009 was not available at the time of this writing

### III. Key Challenges and Research Limitations

The study was confined by several limitations. Most importantly, the period under consideration was 2007 to 2009, which may not have captured all the changes and patterns in the provision in reproductive health (RH) and maternal health (MH).

Second, expenditure data was difficult to access. There was reluctance on the part of some stakeholders to provide data related to budget either due to a *sensitivity to disclose financial information, a lack of such information or both*.

Thirdly, due to time and other limitations, the study focused on Ministry of Health (MOH) data and expenditure, as it was not possible to consider other important players, e.g. the Royal Medical Services, and the Jordanian Association for Family Planning and Protection (JAFPP) or the private sector where data is even less accessible.

Finally, given the absence of many reproductive health indicators, especially reproductive health budget indicators, the study had to resort to reviewing health indicators as a proxy indicator, and this greatly affected the ability of the research to fully capture the impact of the crisis on reproductive health.



## **Food and Nutrition Security Monitoring and Analysis Systems: A Review of Five Countries (Indonesia, Madagascar, Malawi, Nepal and Zambia)**

*United Nations Children's Fund and World Food Program*

### **I. Introduction and Relevance for UNICEF and WFP**

In response to the high commodity food and fuel prices and global financial crises, the World Food Program (WFP) and the United Nations Children's Fund (UNICEF) field offices undertook several steps to enhance their food security and nutrition monitoring capacities. These systems informed the operational response of UNICEF and WFP particularly in the recent years of high uncertainty and volatility. Country offices adopted different measures and forms of collaboration, reflecting the capacities and opportunities on the ground. In a number of countries, the two agencies collect data on a variety of food and nutrition security indicators through their data-collection and monitoring systems: some systems are managed jointly by the agencies, others are managed in collaboration with local governments and in a few cases some monitoring activities are conducted independently by WFP. At the time the RIVAF study was initiated, it was unclear if the data from these systems were compatible, allowing for integrated and richer analysis to better inform decision makers on vulnerability and food and nutrition security in a timely, evidence-based manner.

The WFP-UNICEF RIVAF study aimed to answer these questions, inform headquarter-lead capacity building efforts and provide guidance to the respective country offices, including those in the five countries<sup>16</sup> studied as well as others seeking to engage in similar activities. Emphasis was placed on the efficacy of the systems with respect to the provision of critical information for decision makers as opposed to an assessment of interagency structures and interactions.

In each country, local consultants conducted rapid assessments of indicators, monitoring methods and reporting in a systematic and consistent manner in order to draw lessons from the pilot countries and make recommendations that have a broader geographic reach. All local consultants had the same scope of work, which included specific steps, a detailed list of questions and an outline for their report. These efforts aimed to secure consistent information across all five countries. An additional objective of the study was to compare and draw lessons from across the group of five countries. The joint report contains the findings of the overall review.

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<sup>16</sup> Indonesia, Madagascar, Malawi, Nepal and Zambia. The countries were chosen because they were said to have suffered from the global economic crises and to have adopted some form of innovative and collaborative processes.

## II. Key Findings

In all five countries studied, WFP and UNICEF were seen to have made significant contributions to local food and nutrition security monitoring systems (FNSMS).<sup>17</sup> Both agencies made contributions in the form of staff time, financial resources and training of local government and NGO partners. UNICEF's contribution was primarily in the area of health and nutrition. WFP's contribution was related to food access, coping and resilience. WFP introduced a number of innovative food access indicators such as the coping strategies index, cost of living index and the consumer or food basket. These indicators that track the cost of living or basic goods can be used to monitor the evolution of economic shocks as well, and hence they have become more central to monitoring efforts since the emergence of the global economic crises.

The results of UNICEF and WFP's expansion since the crisis has varied across countries, but includes: 1) increased breadth of information that can capture a fuller picture of vulnerability, food security and nutrition (all countries); 2) expansion of geographic coverage; 3) more consistent and complete measurement (particularly Indonesia); 4) greater ability to compare conditions across populations and space; 5) addition of important household data and information during the unfolding of crises through application of rapid assessments (all countries); 6) greater integration of datasets and 7) more frequent reporting. In several cases, the use of information communication technologies (ICTs) such as the introduction of Personal Digital Assistants (PDAs) and Short Message Service (SMS) dramatically reduced the lag time between data collection and submission to the monitoring system. Users of these devices noted a reduction in errors as well. Pilots in Malawi demonstrated that ICTs can provide real-time feedback to clinics, project staff, households and farmers in the field.

Since the onset of the global crises, both WFP and UNICEF have significantly contributed to country-wide initiatives piloting more consistent, integrated and collaborative local FNSMSs. Systematizing efforts across national and international agencies (WFP, UNICEF, NGOs, etc.) supports deeper analysis and broadens the coverage. Many organizations have different areas of operation; thus harmonizing efforts into a consistent system greatly improves the coverage and quality of FNSMS as a whole. Because WFP operations are oftentimes located in difficult to access and vulnerable areas, its data collection activities usually enhance those of the local government. Vulnerability Analysis and Mapping (VAM) operations including Comprehensive Food Security and Vulnerability Analysis (CFSVAs), Emergency Food Security Assessments (EFSA) and Markets and Cross-border trade monitoring are some of the periodic activities that can support the FNSMS. The use of key indicators and data collection methods that are consistent with the local system when carrying out these activities have also contributed to building the local knowledge base. As detailed in Table 1, the FNSMS of Indonesia is a good example of how both WFP and UNICEF have expanded and deepened coverage since the crisis.

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<sup>17</sup> The local food security and nutrition monitoring system (FNSMS) includes a range of data and information systems used to monitor, analyze and report on vulnerability, food security and nutrition, whether the system is managed independently or collaboratively by a UN agency, local government, NGO or other entity.



Despite much progress, all local consultants noted that there is room for improvement in data quality, analysis and sharing. Indicators are not always consistently defined or measured. The level of aggregation is not always the same and sometimes there are different indicators available for different geographic areas or over time. While adjustments to survey methods and indicator measurement are sometimes warranted, it was also observed that in some cases, the need for modification (e.g., sampling methods in Zambia) was not always critical and sometimes was simply a reflection of donor or individual preferences. Unfortunately, these modifications can introduce other issues such as an inability to make valid comparisons from one period to the next illustrating the need for caution and an assessment of the pros and cons.

Definitions and measurement of nutrition generally followed international standards. Still, local consultants identified some problems with the quality of enumerators, consistent measurement and maintenance of nutrition surveillance and growth monitoring systems. In contrast, the measurement of food security and food access was more varied across agencies and systems. Many of the food security and food access indicators were defined according to the WFP manual, but interpretation of those definitions and measurement was less consistent. In most cases, food security and food access were measured using a number of agency-specific and/or locally defined proxies (Nepal and Indonesia, in particular).<sup>18</sup> These innovations tended to reflect technical capacities, resources and key aspects of vulnerability and food insecurity on the ground. A downside of these innovations is that the uniqueness of the measurement complicates integration of data, comparisons and prioritization of assessed needs.

Overall, the treatment of vulnerability was inconsistent and the term was often used interchangeably with food security. This is a common problem within the humanitarian community, in general. The two concepts are different and each makes an important contribution to understanding food insecurity. Food security is actually a measure of status. Vulnerability suggests deterioration in status dependent on the realization of certain potential conditions. When used properly the two terms provide complementary information about a dynamic process whereby households can move in and out of food insecurity and become less or more food insecure depending on their exposure to stresses and shocks. Although seemingly subtle, the distinction is critical to effective food and nutrition security monitoring and the design of appropriate interventions and responses. WFP's conceptual framework explicitly incorporates risk, coping and resilience and could be used to reinforce these concepts and build staff capacity.

Despite the recognition that socio-economic shocks can have implications on food security and nutrition, the geographic orientation of all five of the country systems is still too skewed toward areas of agro-climatic risks or areas where agencies operate. In order to be able to adequately track and understand the dynamics of economic shocks and external market factors, the coverage needs to expand and incorporate the populations at

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<sup>18</sup> Food security is a complex concept comprised of socio-political, economic and health/nutrition attributes. No single indicator can adequately measure it, and practitioners typically select one or more proxy indicators to assess and triangulate.

risk of these types of shocks. Indicators of impending economic shocks—whether stemming from global financial markets, international commodity markets, etc.—need to be added to the systems and tracked at an administrative level lower than the national or capital city level, preferably at the district level. Examples from the studies where the system under review had accounted for shocks other than droughts and floods can provide some orientation and lessons learned. Malawi and Zambia participate in the informal cross border food trade monitoring system, Madagascar tracks political instability in two major cities and Nepal accounts for critical livelihood strategies based on migration and dependence on Indian demand for labor. These innovations are important illustrations of how local systems can begin to incorporate economic, political and regional dimensions in their monitoring system and analysis. The following table provides a summary of key findings on each system:

<i>Country</i>	<i>Selected Key Findings</i>
Indonesia	Since 1979, the government has been collecting basic health, nutrition and agricultural production data throughout the entire country. A national survey of infrastructure and some basic demographic characteristics was conducted in 2005 and 2009. The FNSMS was established in June 2009 and covers a limited number of districts in two provinces. It is the only source of data on food access. Both UNICEF and WFP participate in the FNSMS.
Madagascar	The government has an agriculture-based monitoring system in the disaster-prone south. More holistic food security monitoring (McRAM) began in 2009 in just two urban centers. A CFSVA was conducted in nine rural districts. Government engagement is limited due to the political crisis.
Malawi	Malawi has a range of food availability, access and utilization data and for a longer time series; however, much of it is collected infrequently (quarterly or annually). There is an HIV/AIDS surveillance system as well. A CFSVA was conducted in 2010. Government engagement and leadership is strong.
Nepal	Food availability and market data have been collected for just a few years. Collection of food access data began in 2008. Some basic health and nutrition data have been available for at least a decade. Geographic overlap and indicator consistency are issues. There are information gaps and quality issues as well.
Zambia	There are long time series of health and nutrition data nationally and economic and cost of living data for urban centers. Community and household surveillance is in WFP areas of operation only. Annual assessments cover areas prone to agro-climatic risks.

### III. Key Challenges

The ability to assess the impacts of global crisis on food security and nutrition was significantly hampered by data availability and the capacity of local consultants. The

local FNSMS in all five countries studied were weak and were riddled with data, information and capacity gaps at the onset of the global crises. Recent system modifications are in most cases less than two or three years old and time series data are still relatively short. This created some challenges for the local consultants in the analysis of the food security impacts of the global crises. Baselines or reference points from which to assess anomalies, as well as the ability to analyze trends, were extremely limited. The short time frame also hindered their assessment of the efficacy of the newly modified local systems. This situation should improve in the coming years as data accumulates.

Data and information generated by local governments were not reliably available or shared. None of the local consultants were able to extract raw data from any of the ministries. WFP and UNICEF staff reported regularly encountering difficulties in gaining access to data as well. Generally, when UNICEF or WFP participated in the actual collection of data, the data was more accessible. The problem is not universal, but it is notable. The data access problem is, to some extent, reciprocal. Government key informants interviewed by the local consultants noted some difficulties in accessing WFP data.

Most governments report statistics annually. The reports are sometimes late and information can be out of date. The information shared is quite limited compared to the actual amount of data collected. The infrequency of data and content of reports generally are not adequate for regular monitoring purposes. An exception would be retail food price data.

Another challenge was the rarity of local consultants who had both the technical expertise and experience with monitoring vulnerability, food security and nutrition for pragmatic and action oriented purposes as opposed to purely study or research. Therefore, actually integrating UNICEF and WFP data streams to assess the impacts of the crisis on food security was a significant challenge. Finally, the WFP-UNICEF RIVAF project attempted to answer many questions in a short period of time. Each consultant had to prioritize his/her work given the large number and complexity of questions, and the limited data and time.

## Monitoring the Impact of the Economic Crisis on Crime

*United Nations Office on Drugs and Crime*

### I. Introduction and Relevance for UNODC

The proposition that the financial crisis could lead to ‘increased crime’—certainly appears to be plausible. Criminal motivation theories, including strain theory, propose that illicit behaviours are caused, at least in part, by structurally induced frustrations at the gap between aspirations and expectations and their achievement in practice.

Where the financial crisis is manifested through decreased or negative economic growth and widespread unemployment, large numbers of individuals may suffer severe, and perhaps sudden, reductions in income or economic stability. This, in turn, has the potential to cause an increase in the proportion of the population with a (arguably) higher motivation to identify illicit solutions to their immediate problems. Whilst this may simply appear as an explanation for property crime, stress situations like these are also the cause of many violent crimes. Unemployed people may become increasingly intolerant and aggressive, especially with their families. Violence among strangers may also increase in situations in which people do not have clear prospects for their future. Periods of economic stress can also have an indirect impact on crime through reduced budget allocations for law enforcement institutions.

The relationship between economic development and crime is clearly a multifaceted one. Crime is a complex phenomenon associated with a number of factors, such as the incidence of organized criminal groups or youth gangs; the availability and degree of protection around potential crime targets; drugs and weapons availability; and drug and alcohol consumption. Keeping in mind the complexity of this relationship, the aim of this study is to explore whether there is evidence in available data to indicate a relationship between economic crises and crime. Where there is evidence of a relationship the analysis explores the power of economic factors in predicting future crime rates at the national level, with a view to enabling countries to be better prepared when facing periods of economic stress.

#### *Data and Analysis*

United Nations Office of Drugs and Crime (UNODC) regularly collects statistical data on crime and criminal justice at global level but in order to explore the relationship between crime and economic crises, it became necessary to further expand and tailor existing data collection systems. In particular, in order to detect and respond to rapidly changing socio-economic situations, the *timeliness* and *periodicity* of data collection had to be increased, and the capacity for time series analysis in light of relevant economic data introduced.

This report describes findings from monthly crime and economic data<sup>19</sup> available from fifteen countries – Argentina, Brazil, Canada, Costa Rica, El Salvador, Italy, Jamaica, Latvia, Mauritius, Mexico, Philippines, Poland, Thailand, Trinidad and Tobago, and Uruguay. The majority of data considered are at national level although data for four cities – Buenos Aires, Montevideo, São Paulo, and Rio de Janeiro – are also examined.<sup>20</sup> These countries and cities were chosen based on a number of factors including overall crime levels, experience of economic downturn during the 2008/2009 financial crisis, the ability to supply high frequency police-recorded crime data, and broad geographic distribution.

Analysis of time series for up to the last 20 years, often including the 2008/2009 period of financial crisis, was used to look for possible associations between crime and economic factors. Where *prima facie* evidence of such an association existed, a statistical model was used to explore whether knowledge of economic changes can be used to predict possible changes in crime events.

Ideally a statistical model would take account of all possible factors impacting on crime (presence of organised crime, youth gangs, drugs and weapons availability, etc.) with a view to excluding or controlling for them. The analysis presented in this report does not do so as a result of limited time, data handling complexity, and data availability. As such, the statistical analysis should not be taken as a comprehensive model for the underlying factors that may influence crime levels and trends. Rather, the analysis is an exploratory attempt to consider whether changes in specific crime types over time may be associated with economic changes as at least *one component* of underlying factors.

## II. Key Findings

The report finds evidence of a relationship between economic factors and crime during an economic crisis or otherwise—specifically that as economic conditions deteriorate, crime increases. In 14 of the 17 countries or cities examined (82 per cent), statistical modelling<sup>21</sup> revealed evidence of a relationship between at least one economic factor and at least one of the three crimes of intentional homicide, robbery or auto-theft.

In 11 of the 15 countries examined economic indicators showed significant changes suggestive of a period of economic crisis in 2008/2009. In a significant number of countries (respectively seven cases when using graphic inspection of data series and eight when utilizing statistical modelling) changes in economic factors were associated with changes in crime. Violent property crime types such as robbery appeared most affected during times of crisis.

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<sup>19</sup> Data on the following crimes were considered: intentional homicide, robbery and theft of motor vehicles. The economic variables considered were: consumer price index; share price index; lending rate; treasury bill rate; unemployment rate; gross domestic product; deposit bank liabilities; deposit rate; and currency units per special drawing rights.

<sup>20</sup> In total 17 geographical units -countries or cities - have been considered in the analysis (see Table 1)

<sup>21</sup> Based on Seasonal Autoregressive Integrated Moving Average models

The number of robberies committed doubled in some instances over the period of the economic crisis. In some instances, increases in homicide and motor vehicle theft were also observed. These findings are consistent with criminal motivation theory, which suggests that economic stress may increase the incentive for individuals to engage in illicit behaviours. While in some cases it was difficult to discern an increase, there were no observed cases of a decrease in crime during a period of economic stress. As such, the available data do not provide any evidence to support a criminal opportunity theory that decreased levels of production and consumption may reduce some crime types, such as property crime, through the generation of fewer potential crime targets.

For each country/city a number of individual crimes and economic variables were analyzed. Across all combinations, a significant association between an economic factor and a crime type was identified in around 47 per cent of individual combinations. For each country, different combinations of crime and economic predictors proved to be significant. Between the two methods used to analyze the links between economic and crime factors (graphic analysis and statistical modelling), different combinations of factors were found to be significant and in five cases the two methods identified the same variables. Three such cases were represented by city contexts rather than national contexts. In light of the fact that only four city cases were considered—compared with 13 national contexts—this may indicate that associations between crime and economic factors are best examined at the level of the smallest possible geographic unit.

**Table 1: Main findings of data analysis**

Country	Geographic unit	Economic crisis (on visualization)	Crime type affected by economic crisis (on visualization)	Economic indicator identified as predictor of crime change (by statistical model)
Argentina	Buenos Aires	✓ (in 2002)	-	Share price index
Brazil	National	✓	n/a	Share price index, unemployment rate
	Rio de Janeiro		Robbery, motor vehicle theft	Treasury bill rate
	Sao Paulo		Homicide, robbery	Male unemployment rate, currency per SDR
Canada	National	✓	n/a	Treasury bill rate, unemployment rate, share price index, deposit rate
Costa Rica	National	✓	Robbery	-

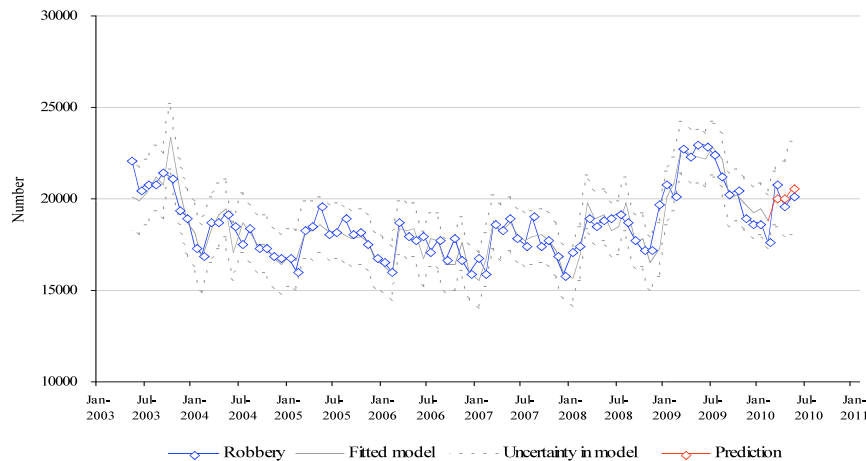
El Salvador	National	✓	Homicide	-
Italy	National	✓	Robbery, motor vehicle theft	Real income
Jamaica	National	✓	Homicide, robbery	-
Latvia	National	✓	-	Youth unemployment rate
Mauritius	National	✓	-	Real income, currency per SDR
Mexico	National	✓	Robbery, motor vehicle theft	Male unemployment
Philippines	National	-	-	Deposit rate, share price
Poland	National	-	-	Treasury bill rate
Thailand	National	✓	Motor vehicle theft	Unemployment rate, real income
Trinidad and Tobago	National	✓	-	Real income, lending rate
Uruguay	Montevideo	-	-	GDP

Where statistical modeling identified an association between one or more economic variables and crime outcomes, the model frequently indicated a lag time between changes in the economic variable and resultant impact on crime levels. The average lag time in the contexts examined was around four and one half months. It should be noted that the relationship between crime and economy is not necessarily uni-directional. Whilst there are theoretical arguments around the reasons that changes in economic conditions may affect crime, it could also be the case that crime itself impacts economic and developmental outcomes e.g. when very high violent crime levels dissuade investment. During the statistical modelling process, crime was set as the ‘outcome’ variable and economic data as the ‘independent’ variable. As such, the model was not used to investigate the converse relationship i.e. whether changes in crime could also help explain economic outcomes.

The statistical model proved successful at forecasting possible changes in crime for a number of crime type-country/city contexts. Forecasting for a period of three months using a statistical model with economic predictors proved possible with reasonable accuracy (both in terms of direction and magnitude) in a number of different contexts, including both in times of crisis and non-crisis. While many of the forecasts are sufficiently accurate to be of value in a practical scenario, in some other cases crime

forecasts led, however, to underestimation of crime changes, suggesting that economic changes are not the only factor that may impact levels of crime and an optimal modelling of crime changes should also include other dimensions.

**Chart 1: Crime Forecasting Using Statistical Modelling (Robbery in Sao Paulo, Brazil, 2003-2011)**



### III. Key Challenges

Main challenges faced in the project included the efficient collection of timely, high frequency data and the development of appropriate statistical analytical techniques. With regard to data collection, steps have been taken towards the development of an online data portal for data reporting. The portal is currently at testing stage with the countries for which data are presented in this report. Once the mechanism for data reporting is fully functioning, the challenge will be to further develop the statistical methodology and to develop a sustainable capacity of ongoing analysis, forecasting, and facilitation of results sharing with the international community. Whilst the statistical methodology is suitable in many ways, further expert input will be required in order to refine the statistical approach and to maximize the quality of outputs. In addition, attention should be given to nations' requirements for training needs for conducting statistical analysis and to the policy-relevance and use of results.

In general terms, while the challenges remain significant, this report demonstrates that with few resources a lot may be learned from the application of analytical techniques to existing data. The analysis reported here does not prove the existence of relationships between economic factors and crime (for example, more countries, more crime types and more refined economic variables should be used). However, it does provide indications that certain associations are present, and that much may be gained from further investigation. If the impact of economic stress on crime trends can be further understood, and even forecasted in the short-term, then there is the potential to develop policy to reduce crime.

This research shows that an ongoing monitoring system at national (or international) level can be developed with the following features:



- Continued methodological development, including refinement of statistical indicators and further work on approaches to data analysis and predictive models
- Finalizing the online data reporting 'portal' to facilitate collection of regular (monthly) data on crime and standardize data processing
- Creation of standard products to be used for dissemination, such as graphical tools and statistical indicators based on available data
- Strengthening the exchange of information and experience between countries.

A system with such characteristics has the potential to become a strong 'early-warning' system on the impact of economic crises on crime. Information on the evolution of crime trends and results of analysis would represent a valuable resource both at national level and when shared more widely with the international community, particularly neighbouring countries.

## Smugglers and Vulnerable Migrants in Central America and Mexico

*United Nations Office of Drugs and Crime*

### I. Introduction and Relevance: Globalized Migrants, Criminals and the International Community

International migration has been increasing for the last 20 years, pushed by the combined effect of rising socio-demographic disparities and seemingly reduced distances, as a result of better telecommunication and transportation<sup>22</sup>. Irregular migrants are vulnerable to many forms of victimization, as they cannot seek protection from the authorities. They often rely on criminals to assist them in migrating thereby putting their lives at risk. Thousands of migrants die annually attempting to cross a sea or land border.

In recognition of the need to confront organized criminal networks on a multilateral ground, the United Nations Transnational Organized Crime Convention (UNTOC)<sup>23</sup> was adopted by the General Assembly in 2000 and entered into force in 2003. One of the supplementing protocols to the UNTOC specifically covers Smuggling of Migrants by Land, by Sea and by Air<sup>24</sup>. The UNTOC and supplementing protocols provide Member States with tools for international cooperation, florid normative support, and requires them to strengthen their efforts to share information. Transnational organized crime groups, such as those abusing migrants' vulnerabilities, often operate in developing or emerging countries where the criminal justice capacity is too weak to face the relatively enormous resources these criminals command.

The United Nations Office on Drugs and Crime (UNODC) is mandated to assist governments in full implementation of the UNTOC and its supplementing protocols. To support the international community in combating the criminal exploitation of migrants, UNODC conducts research aimed at monitoring smuggling in different regions of the world. This particular study was conducted in Mexico and Central America. In addition, studies in Africa<sup>25</sup> and South Asia<sup>26</sup> were conducted by UNODC to assess the role and the modus operandi of the smuggling networks operating in these regions. The studies assess the risks, social costs and hardship of migrants seeking a better future. An

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<sup>22</sup> UNDP "Human Development Report 2009; Overcoming barriers: Human mobility and development", United Nations Development Programme, New York 2009.

<sup>23</sup> The United Nations Convention against Transnational Organized Crime, adopted by General Assembly resolution 55/25 of 15 November 2000. It opened for signature by Member States on 12-15 December 2000 and entered into force on 29 September 2003.

<sup>24</sup> The Protocol against the smuggling of migrants by land, sea and air supplementing the "UN Convention Against Transnational Organised Crime". UN G.A. Res. 55/25, 55<sup>th</sup> session, 8 January 2001, entered into force on 28 January 2004.

<sup>25</sup> <http://www.unodc.org/unodc/en/human-trafficking/migrant-smuggling/the-role-of-organized-crime-in-the-smuggling-of-migrants-from-west-africa-to-the-european-union.html>

<sup>26</sup> <http://www.unodc.org/southasia/en/topics/frontpage/2009/smuggling-of-migrants.html>

understanding of the level of perceived risks and awareness of the risks associated with these forms of migration is critical to tailoring preventive measures and ensuring safe migratory paths for all would-be-migrants. At the same time, these sorts of assessments, repeated over time, will allow governments to monitor changes in routes and in vulnerable migrant communities in order to respond quickly to new threats.

## II. Key Findings: Voices of Migrants

The purpose of this study is to assess the impact of the economic crisis on migrant smuggling in Central America. In particular, the study examines how these forms of migration are evolving in the region, with a special focus on migrants' vulnerabilities. The study is based on three sources of information: Desk Review, Field Interviews and Official Statistics. Because of its position as a natural gateway of irregular migration to the US the fieldwork was concentrated in Mexico. This allowed a reduction of costs whilst keeping the overall scope of the research on the entire Central American region. The field research was conducted between September 2010 and May 2011 and consisted of interviews with 71 Central American migrants transiting in Mexico on the way to the United States, 47 qualified informants (law enforcement officers and other experts) and 17 migrant smugglers. These interviews are documented in a voice archive and unedited interview transcripts. Migrants were interviewed about their motivation to migrate, the risks and costs they have faced, and how the economic situation may have affected their migratory experience. A time series analysis was carried out on official Mexican and US statistics on detected irregular migrants—those migrants who were detained in passage—as well as on a vast dataset from a periodical survey among migrants crossing the Southern border of Mexico (EMIF SUR). Similarly, official socio-economic statistics were analyzed to measure how the economic dynamics may have affected smuggling of migrants in the region.

### *Stories of hope and disillusion*

Official statistics show the number of irregular migrants detected in Mexico and USA steadily increased from the beginning of the past decade until the year 2005, followed by a four year decline. More recently, the number of detected migrants raised again in the years 2009 and 2010. Migrants are primarily young males from Central America.

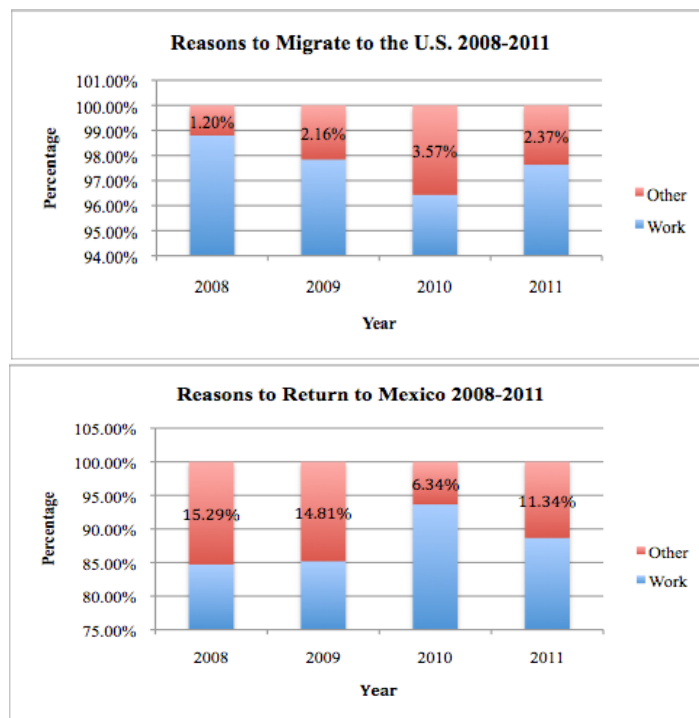
*Table 1. Socio-demographic indicators of the flow of migrants returned by U.S. and Mexican authorities. 2004-2010*

	2004	2005	2006	2007	2008	2009	2010	Total
<i>Gender (%)</i>								
Male	83.85	84.2	81.91	82.46	82.78	84.63	N.D	83.38
Female	16.15	15.8	18.09	17.54	17.22	15.37	N.D	16.62
<i>Average age</i>	26.29	26.30	26.33	26.54	27.25	27.00	26.52	26.65
<i>Does (s)he have a job in the origin country (%)</i>								
Yes	59.88	31.07	38.48	78.09	79.02	82.22	67.77	64.02
No	40.1	68.93	61.52	21.91	20.98	17.77	32.23	35.98

Source: Elaboration EMIF-SUR data

In the last few years, irregular migration through Mexico remained constant with an upward trend. In particular, Honduran nationals are employing smugglers more frequently.

It is difficult to assess with any precision how much the economic downturn impacted the decision to migrate and/or the migrants' risks during the smuggling process. However, the study clearly shows that the primary motivation behind these forms of vulnerable migration is economic. The 2008 economic downturn did not discourage these forms of migration. Data shows that migrants transiting across Mexico, some to the United States, are driven by the financial situation in their country of origin rather than the economic adversity in the destination country. Thus, crisis in the country of origin encourages their journey even when it hinders their incorporation into the labor market in the destination country.

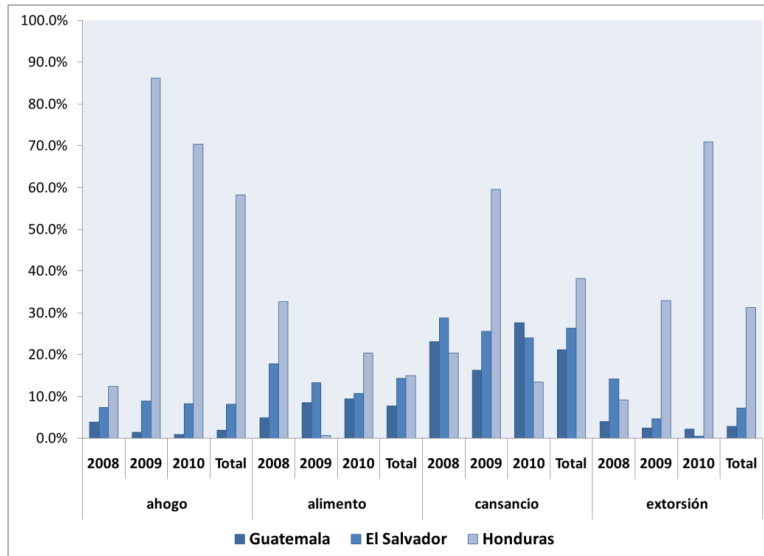


Source: Elaboration EMIF-SUR data

The field research shows that both services and costs vary for recently smuggled migrants. The costs for being smuggled through Mexico increased in 2009 and 2010. The research shows that Honduran migrants are most vulnerable during the smuggling process, as they pay the highest costs and are more likely to be victimized. This again points to the importance of the economic circumstances of the source country. Honduras is the poorest country among the top origins of irregular migrants to the USA, with a GDP

per capita of less than 3000 USD.<sup>27</sup> In addition, Honduras was heavily impacted during the years of the crisis. Conversely, the relative limited risks faced by Guatemalan migrants may perhaps be explained by the stronger economic profile of the country in the period studied.

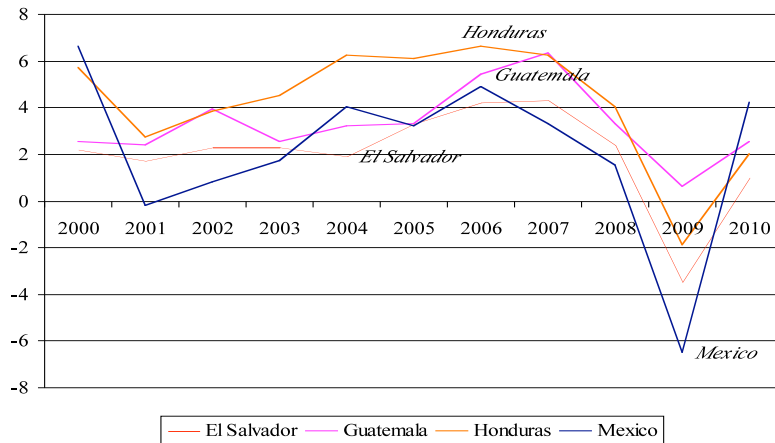
Figure 2. The risks mentioned by the Central American migrants crossing the U.S. Mexico border. By country of origin. 2008-2010.



Legenda- Ahogo : Drowning ; Alimento : Lack of food ; Cansacio : Fatigue ; Extorsion : Extortion

Source: Elaboration EMIF-SUR data

Figure 3. GDP annual percent change for selected countries



Source: International Monetary Fund

<sup>27</sup> Four Latin American countries topping the main origins of irregular migration into the USA, accounting for more than 90% of the nationalities officially detected at the US border. Honduras, Guatemala and Mexico. Mexico is the richest of these four, with a GDP per capita of about 9,500 USD recorded in 2005. El Salvador recorded a GDP per capita of 5,130 USD, Guatemala of 4,400 USD and Honduras of 2,820 USD.

Abuses suffered by migrants during their journey were documented by the field researchers. At least one or more of assault and robbery, physical violence, sexual violence, kidnapping and extortion, labour or sexual exploitation (trafficking), and death were documented. There is evidence that some migrants are repeatedly assaulted along their migratory path.

#### *Los Zetas taking over*

The level of violence has drastically increased in the last two years. In the past, the migrant smugglers operating in Mexico and Central America (called *polleros* or *coyotes*) were both entrenched and coordinated. This resulted in reduced costs and risks of being detected, and increased the efficiency of the passage. As a result, the number of irregular migrants crossing into the US increased. In recent years, however, the large number of vulnerable migrants has attracted the interest of other criminal groups, which are now moving into the migration business. Organized criminal elements, which have traditionally been confined to drug trafficking, are now targeting irregular migrants for extortion. These criminal groups, broadly called *Los Zetas*, increasingly employ the resources and the mass violence normally used against rival drug cartels against the migrants. The field research clearly shows that *Los Zetas* are operating in the whole Central American region.

*“When they tell you ‘beware’ they refer to los Zetas, because they take you and hit you hard. Because there are lot who suffered this, it is happened, they take you and you have to call your family, they send money, much money, and then let you go there and all beaten”* (Interview with a migrant in Mexico City)

*"At that time you did not hear of los Zetas...los Zetas arrived in these last years...but at that date could be heard rumors ... but not to do so much evil, but these years, like two years ago, is already frightened people. They are hitting hard "* (Interview with a migrant in Tabasco)

Episodes of the kidnapping, extorting and killing of migrants that were attempting passage to the United States via Mexico increased rapidly during the months of this research<sup>28</sup>; enough for patterns to emerge. As a paradox, it appears that the traditional migrant smugglers responsible for the large numbers of irregular migrants crossing Mexico are now offset by the spread of violence brought by these newcomers in the migrant business. Indeed, it is not only the migrants, but also the smugglers, that are extorted and threatened as their role in the smuggling networks is taken over by these more powerful groups.

*“I am a guide, I work for ‘that’ person [el coyote]. I just call my boss and I tell him the amount of money I have collected, because he tells me his boss*

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<sup>28</sup> At the moment of the writing of this report, the media informs the findings of more and new *fosas comunes* (mass graves) in San Fernando, Tamaulipas, located circa 120 kilometers from the Mexican border with the USA. The number of bodies found exceeds the 500 corpses. In August 2010, when in this location 72 bodies were found, there was a great shock both in Mexico and Central America; among the found bodies there were nationals from Guatemala, El Salvador, Honduras, Ecuador, Brazil and India.

*has to pay los Zetas. He pays los Zetas to let his guides and the migrants pass through and take the train to Piedras Negras ... "* (Interview with a smuggler-guide in San Luis Potosi)

Although this change in the criminal structure of the territory coincides with the recent economic turmoil, it was difficult in this round of initial research to establish a link between the two phenomena.

### III. Key Challenges: A Complex Topic

As with any other criminal phenomenon, the smuggling of migrants is much discussed but difficult to analyze with surety. Official numbers can only capture a part of the smuggling activity. As a consequence, strict quantitative analyses based on official statistics needs to be complemented by qualitative insights, such as the perceptions and experiences of the victims and the offenders. It is only a constant monitoring of mixed sources of information that can establish trends, patterns and of the severity of this crime.

In addition, migration is an issue that tends to incite strong opinions among policy makers, authorities and activists, who often hold opposing views. Conducting this type of research requires experts who are seen as a *neutral authority*. For this project, it was necessary to establish trust between the research team and all the various stakeholders—in order to access data, to access migrants' shelters, and to speak with officers and NGO representatives. In the long run, a systematic monitoring approach to this topic will become widely accepted as a policy tool used by all relevant actors.

Gaining the trust of the respondent, whether a migrant, a smuggler or an officer, is as important as it is difficult. In this case, the neutrality and authority of the United Nations helped to create a trusted environment. Employing a well-trained researcher, to conduct the interview in a sensitive manner and guarantee confidentiality, is equally important. Thus, the selection of the group of researchers required time but was absolutely critical to the success of the project.

The most relevant challenge was the level of security for the field researchers. In one case, officers being interviewed in a specific location in the country suggested that the researchers should not physically come for the interviews, as the town was in the hands of the cartels. UNODC is extremely thankful to these researchers that put their lives at risk to conduct the study on the ground, as well as to all the Mexican officers and migrants struggling every day for a better life.

## A Visual Analytics Approach to Understanding Poverty Assessment through Disaster Impacts in Latin America and Africa

*United Nations Office for Outer Space Affairs*

### I. Relevance of the research for UNOOSA

The United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), of the UN Office for Outer Space Affairs (UNOOSA) is mandated "*to ensure that all countries and international and regional organizations have access to and develop the capacity to use all types of space-based information to support the full disaster management cycle*".

This project is designed to better understand how space-based information, reports and quantitative data can aid in understanding the effects of the Global Economic Crisis (GEC) on populations that are vulnerable to disasters of natural origins. Two basic ideas shape the project: First, it is based on the hypothesis that the GEC created a set of unique, previously unexamined circumstances that have negatively affected livelihoods, increasing poverty conditions and subsequently increasing vulnerability to natural disasters. Second, the project is based on the idea that integrating multiple sources of existing information could lead researchers to new insights on this issue.

The project therefore integrates data, maps and documents from government sources, regional and international organizations and “gray” literature to understand how the GEC affected a population’s ability to cope with the impacts of natural disaster, using Guatemala as a case study. Research was conducted through the review of documents elaborated by the governments of Guatemala, the United Nations, international organizations, and Non-Government Organizations (NGOs); as well as media reports. In addition, satellite imagery, geographically-referenced census information, country-level statistical data and disaster data derived from the Centre for Research on the Epidemiology of Disasters and from national disaster management agencies were also used to conduct the analysis.

Using this approach, researchers sought to answer the following questions:

- How specifically have livelihoods been affected by the GEC?
- How have impacts of the GEC on livelihood exacerbated vulnerability to natural hazards?
- How do impacts from natural disasters reveal vulnerabilities present before an event and forecast vulnerability after an event?

New knowledge in this area complemented the research agenda of UN-SPIDER in two-specific ways:



1. As a programme with a mission to address the full disaster management cycle, the project complements UN-SPIDER's ongoing research into disaster management by providing additional insight into how to potentially *mitigate* disaster impacts by understanding vulnerability and coping capacities.
2. As an organization with strong applied research interests in diverse and emerging technologies to support disaster management such as remote sensing platforms and geographic information systems (GIS), UN-SPIDER is interested in investigating the usefulness of the newly emerging field of Visual Analytics as a methodological approach to gather information targeting the whole disaster management cycle.

The research agenda related to this project translates into several items that will contribute to UN-SPIDER's activities:

- Knowledge gained from the project will be disseminated to various UN-SPIDER regional support offices (RSOs), officially nominated National Focal Points (NFPs) and the broader international disaster management community via the UN-SPIDER Knowledge Portal (<http://www.un-spider.org/>) and through international and regional workshops organized by UN-SPIDER.
- Disaster management stakeholders in Guatemala and Burkina Faso, with whom UN-SPIDER has strong relationships, will benefit from the both the information technology advances as well as their applications.

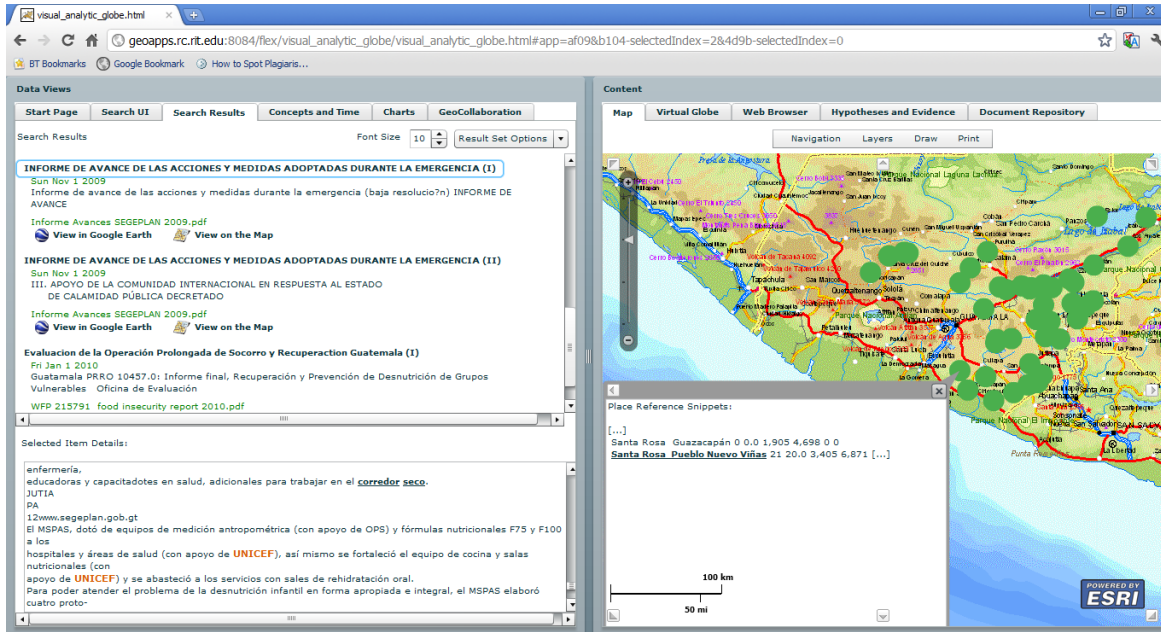
## II. Information Management using visual analytics

An essential element of this project has been the development and testing of the Visual Analytic Globe (VAG), a tool developed specifically to integrate multiple streams of information to display data, information and maps from the two pilot countries: Guatemala and Burkina Faso, in a more holistic fashion. Several computational procedures and tools with different capacities were integrated into VAG, allowing researchers to view a wide variety of data which, when integrated, could lead to the discovery of potential connections between vulnerability, livelihoods, poverty and disasters.

Figure 1 is a typical screen display of the VAG. The upper left of the figure lists several official documents from the government of Guatemala and from United Nations organizations, which had been introduced into the repository of documents. These types of documents have been "mined" to uncover insights specifically related to the Corredor Seco (Dry Corridor) in Guatemala, which suffered from food insecurity as a combination of the GEC and a drought, which manifested itself in 2008 and 2009.

As seen in the text presented in the lower left of Figure 1, UNICEF has highlighted in orange-colored text, thereby highlighting the fact UNICEF has been working in the area. The map on the right shows those places mentioned in the UNICEF document. Such a geo-coding procedure essentially creates a map of areas relevant to the UNICEF document.

The VAG allows analysts to conduct key-word searches to discover documents in the open web or in a repository of documents explicitly established for this project. In addition, it allows for the combined display of maps, charts and time-lines of relevant events such as disasters.



**Figure 1: a typical screen of the Visual Analytic Globe presenting both the results of a query, text, and a map.**

### III. Key Findings

Discerning the specific effects of the GEC on particular countries and vulnerable communities is a challenging task. Vulnerability often stems from a wide variety of intertwined factors that make it difficult (if not impossible) to discern the specific effects of one particular factor like the GEC. For example, poverty, weak governance, social and armed conflicts, current economic policies, population growth, a lack of awareness regarding managing vulnerability, and a non-existent culture regarding disaster prevention are typical factors which enhance vulnerability<sup>29</sup>. Regional variations in these factors imply different vulnerability levels to external shocks and stresses. Researchers analyzed how diverse factors converged with livelihood strategies in disaster-prone regions of Guatemala, and sought insights into the way that international, national, and local factors affected the ability of households to cope with both the economic crisis and natural disaster.

<sup>29</sup> Villagran de Leon, J.C. **Risks in Central America: Bringing them under control.** In: Brauch, H.G., Oswald Spring, U., Mesjasz, C., Grin, J., Kameri-Mbote, P., Chourou, B., Dunay, P., and Birkmann, J. (Editors): **Coping with Global Environmental Change, Disasters and Security: Threats, Challenges, Vulnerabilities, and Risk.** Vol. 5. Hexagon Series on Human and Environmental Security and Peace. Springer, 2011.

The macro-level insights pointed to government and household-level impacts of the economic crisis:

- In Guatemala, the GEC manifested itself when the country was recovering from a series of very large disasters, and some regions of the country were already dealing with food insecurity. Furthermore, pre-GEC corn and fuel prices in the international and national markets were already at high levels.<sup>30, 31</sup> However, at least in the short term, the GEC reduced these global corn and fuel prices considerably, thereby alleviating some of these pressures.
- In Guatemala, the GEC impacted the country financially through decreased imports and exports, direct foreign investment, tourism, and remittances<sup>32</sup>. There was an overall contraction in the local economy. The GEC thus reduced the capacity of the government to cope with disasters due to reductions in tax revenues derived from international trade and local taxes such as VAT and income tax<sup>3</sup>, some of which are typically used to respond to food insecurity<sup>33</sup>.

The project further focused on three geographic areas in order to discern the effects of the GEC on coping capacities of the government and of local communities, which are linked to vulnerability and essential to disaster response and recovery. These regions were impacted by hydrological and geological disasters during and after the GEC. The Corredor Seco (Dry Corridor), where the Chiquimula and Jutiapa Departments are located, was impacted by drought in 2009, which continued into mid-2010. Escuintla, Solola, the Highlands and the Flood Plains in the Pacific and the Caribbean were impacted by tropical storm Agatha in June 2010. As expected, impacts varied by region.

Communities in **Chiquimula and Jutiapa** (which in 2001 suffered from a combined shock from reduced international coffee prices and drought) rely on remittances and other sources of income related to livelihoods for their subsistence. According to the World Bank and the Inter American Development Bank, remittances to Guatemala from workers in the United States decreased by almost 10 per cent<sup>34</sup> due to the GEC. Furthermore, the National Survey on Living Conditions conducted by the National Statistics Institute of Guatemala in 2006<sup>35</sup> indicates that between 7 per cent and 9 per cent of the people in Chiquimula and Jutiapa rely on remittances. Government and UN reports indicate that in this region, women and children in general, and pregnant or lactating women

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<sup>30</sup> UNICEF: Guatemala: The Perfect Storm. Impact of Climate Change and the Economic Crisis on Children and Adolescents. First Edition, 2010.

<sup>31</sup> ECLAC: Guatemala: Evaluación de los impactos económicos, sociales y ambientales, y estimación de necesidades a causa de la erupción del volcán Pacaya y la tormenta tropical Agatha, Mayo – Septiembre 2010. April 2011

<sup>32</sup> GoG and International Community: Evaluación de daños y pérdidas sectoriales y estimación de necesidades ocasionados por el paso de la Tormenta Tropical Agatha y la erupción del Volcán Pacaya. 30 June 2010.

<sup>33</sup> Secretaría Nacional de Seguridad Alimentaria y Nutrición (SESAN): Comments from Director of SESAN during UN-SPIDER mission to Guatemala. November 2010.

<sup>34</sup> Data from: FOMIN, World Bank: Remittances to Latin America and the Caribbean in 2010. Stabilization after the Crisis. 2011.

<sup>35</sup> Instituto Nacional de Estadística de Guatemala (INE): Encuesta Nacional de Condiciones de Vida – Principales Resultados 2006 (ENCOVI) 2006

specifically are heavily impacted by decreased remittances.<sup>36</sup> Visual analytics-based examination of open source media reports helped researchers find details about a visit to Guatemala by Olivier De Schutter, the United Nations Special Rapporteur on the right to food and the insight that weak government social protection systems have also reduced the capacity of these particular groups to cope with the drought<sup>37</sup>.

In the **Escuintla Department** (a department that is relatively economically sound<sup>38</sup>), which was impacted by the volcanic eruption of Pacaya volcano at the end of May of 2010 and then by Tropical Storm Agatha in the days that followed the volcanic eruption, the project did not find any substantial evidence that the GEC impacted the vulnerability of communities to floods. The impacts due to the tropical storm included damages to private and public infrastructure, and export crops (sugar cane). According to the damage and needs assessment report from the Economic Commission for Latin America and the Caribbean (ECLAC)<sup>3</sup>, the storm impacted 17.3 per cent of the population in this Department. Escuintla's economy is mainly dependent on the exportation of sugar and of coffee to a lesser degree. The GEC had little impact on the price of sugar in the international stock exchange of Chicago<sup>39</sup>, and losses due to tropical storm Agatha were also small. This implies minimal impact on jobs in the sugar cane export sector. In contrast, prices of coffee in the international stock exchange dropped considerably due to the GEC and experienced a decline until the spring of 2010, but never reached the extremely low levels of 2001, which increased unemployment and led to food insecurity.

The **Solola Department** is mostly composed of ethnic groups which are relatively less economically sound. Communities in Solola depend on income from agriculture, salaries, services, and tourism. In this department Tropical Storm Agatha provoked extensive landslides affecting communities and destroying road infrastructure and public infrastructure. As in the case of Escuintla, researchers found no substantial evidence that the GEC impacted the vulnerability of communities. In comparison with Chiquimula and Jutiapa, in Sololá only 1 per cent of the population receives remittances from abroad. In addition, because communities in Sololá rely either on subsistence agriculture (corn, black beans) or on the purchase of corn as a main source of food, the initial sharp drops in the prices of corn in the international stock market should have provided some relief to communities in Solola. The GEC reduced prices of corn by nearly half from their top values in March 2008 in the international level. The housing sector also experienced damages as a consequence of tropical storm Agatha. While it may be more difficult for communities in Solola to cope with the impacts of the disaster, it cannot be stated that the GEC directly impacted their coping capacities. However, the project did find evidence of reduced tax revenues due to the GEC, which inhibited the capacity of the government to

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<sup>36</sup> Gov. of Guatemala, United Nations and Humanitarian Country Team: Guatemala – Food Insecurity and Acute Malnutrition Humanitarian Appeal. March 2010

<sup>37</sup> United Nations General Assembly, the Human Rights Council: Report of the Special Rapporteur on the right to food. 26 January 2010.

<sup>38</sup> Comment based on a review of the 2002 Housing and Population Census data and on the 2006 Index of Unsatisfied Basic Needs and national poverty data.

<sup>39</sup> Source: Chicago Stock Exchange: <http://www.boursereflex.com/>

assist affected communities throughout the country and to cope with impacts provoked by Tropical Storm Agatha<sup>40</sup>.

Researchers involved in the project found that the methodological approach contained in the VAG allowed them to discover some connections and geographic and temporal trends more easily. The VAG has been developed to take advantage of variety of data processing tools such text engineering, remote sensing, and geo-coding in a unified visual interface.

### III. Key Challenges

Challenges experienced in the course of this project were three-fold. First, it was difficult to attribute communities' vulnerability to disaster to the effects of the GEC based on available data and documents. For example, many official government, United Nations and NGO reports were helpful to gather insights into the effects of the GEC (both positive and negative) such as country-level statistics, prices of specific products in the international stock markets and global remittance activity; but generally (not always) lacked insights into how households in specific regions of the countries were coping with decreased remittances. Furthermore, these reports were able to underline diminished government coping capacity but did not allow researchers to, for example, find precise correlations between the effects of the GEC and the capacity of the government to reconstruct public infrastructure damaged or destroyed by Tropical Storm Agatha. Open source media proved useful for finding evidence on how individuals in specific places were affected by disasters and the GEC crisis due to media coverage of these events. However, veracity and accuracy of such sources must always be taken into account. Sub-country level census, poverty and country-level information allowed for detailed regional analysis to identify broader trends, but the scale of this data did not allow for household-level analysis. However, the project was able to gather vast amounts of micro-scale disaster impact data. Despite these challenges, it is believed that the information analyzed proved to be effective to understand how disaster impacts revealed vulnerabilities and how the GEC may have impacted coping capacities.

Second, obtaining and utilizing datasets also proved challenging. When researchers attempted to replicate this study in Burkina Faso, the research team created numerous geographically-referenced census data sets from open source documents obtained from the Institut National de la Statistique et de la Démographie (INSD) website<sup>41</sup>. Creating these datasets however was a time-consuming and challenging process given the fact that the data was "buried" within tables inside large PDF documents.

Third, a significant challenge in this project stemmed from administrative issues. Due to a lengthy delay caused by multiple factors in processing a contract to an academic institution (the Rochester Institute of Technology) tasked with the development of the visual analytic tools and with the processing of documents prior to their use (text engineering, geo-coding, assembly of database), the time available for analysis was considerably reduced.

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<sup>40</sup> SEGEPLAN: Tercer Informe Presidencial. 2011

<sup>41</sup> INSD website: <http://www.insd.bf/fr/>

Ultimately, it is foreseen that this effort will feed into broader vulnerability and disaster assessment activities such as “crisis mapping” that utilize data<sup>42</sup> sets generated locally and that are gaining the attention of the international disaster management community and society at large.

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<sup>42</sup> P. Meier and K. Brodock, "Crisis Mapping Kenya's Election Violence: Comparing Mainstream News, Citizen Journalism and Ushahidi," Harvard Humanitarian Initiative, 2008.



## **Economic crisis, international tourism decline and its impact on the poor: An analysis of the effects of the global economic crisis on the employment of poor and vulnerable groups in the tourism sector**

*United Nations World Tourism Organization, International Labour Organization*

### **I. Introduction and Relevance to the UNWTO and ILO**

Tourism has become a major engine for socio-economic growth. Given its geographical spread and its labour intensive nature, it provides an increasingly wide range of job opportunities for poor and vulnerable groups in developing countries, especially, but not only, in rural and remote areas. Tourism also provides indirect employment and income for the poor in related sectors such as construction, handicrafts or agriculture. Moreover, principally in developing countries, there is a significant group of informal workers whose income is provided by tourism. Tourism is therefore one of the economic sectors through which Least Developed Countries (LDCs) can increase their participation in the global economy and advance development.

In order to gain a deeper insight into how the 2008 to 2009 economic crisis affected tourism demand and the livelihoods of poor and vulnerable groups reliant on the sector, the UNWTO and ILO RIVAF study aims to evaluate the direct and indirect impact of a decrease in tourism demand, as a consequence of the global economic crisis, on the employment of poor and vulnerable groups. Since 2003, UNWTO has been measuring the short-term performance of tourism through the use of monthly indicators on international tourist arrivals and receipts complemented with a confidence index survey among over 300 tourism experts worldwide. At the outset of the economic crisis, UNWTO set up the Tourism Resilience Committee where Member States shared experiences on the impact of the crisis in tourism and on policy measures undertaken to mitigate such impact. UNWTO has been long working on tourism and poverty reduction. One of its main activities is the ST-EP (Sustainable Tourism - Eliminating Poverty) Initiative, which aims to reduce poverty levels through developing and promoting sustainable forms of tourism. Within the framework of ST-EP, UNWTO has regularly used the value chain analysis methodology to study income flows in the tourism sector and identify opportunities for poorer groups of the society to benefit from tourism development.

This study first seeks to quantify the effects of the economic crisis on tourism, and second to examine how a decline in tourism demand impacts employment (levels/opportunities) of the poor. Furthermore, research focused on what public policy and business measures were undertaken to mitigate the impacts of such crisis on disadvantaged groups, with a particular eye to understanding measures which can be adopted in similar situations. The study complements research efforts by UNWTO and

ILO in evaluating qualitative and quantitative short-term data and indicators for monitoring external shocks, and identifying examples of policies that allow sustaining tourism employment among the poor and vulnerable during crises situations. The research built on UNWTO and ILO experience in: a) collecting national tourism and employment statistics, b) analysing existing tourism value chains and their linkages in selected destinations, and c) evaluating data on the impact of tourism in poverty reduction. This involved, first, a broad macroeconomic survey of global tourism demand. In addition, case studies were carried out in Costa Rica, the Maldives and Tanzania, using data and documentary analysis, qualitative stakeholders' expert interview, and standardised surveys among employees and employers, as the primary research tools.

In summary, the objectives of the study were as follows:

- To evaluate how the decline in tourism demand during the 2008-2009 global economic crisis affected growth and employment in the tourism sector, namely for the poor and vulnerable groups in the sector and with a particular focus on developing countries;
- To explore what influence public policy measures taken across countries might have had in mitigating the impact of the crisis on demand and ultimately on employment;
- To assess the level of resilience of the sector to crises and tourism's potential contribution to economic recovery; and
- To assess which segments (package tours, individual travellers, meetings), origin markets and industries along the value chain (travel agents, hotels, incoming agencies, tourism related trade and other tourism related services) were most affected and had a higher impact in terms of employment of the poor and vulnerable;

## II. Key Findings

In the past decades, growth in international tourism has strongly contributed to the increase of GDP at a global scale and in particular in low-income countries. Between 1995 and 2007, the importance of international tourism receipts to GDP has increased substantially in regions such as Central America, the Middle East, North and Sub-Saharan Africa. By income category, this growth has been of particular significance in low-income countries. Tourism exports have thus played an increasingly important role as a source of external income for low-income countries advancing their participation in the global economy. Tourism is estimated to account for 45 per cent of the export of services in developing countries. Tourism ranked fourth as the most important source of export earnings for low-income countries in 2007.

Given the limitations of available data, the macro-level analysis of the impact of the 2008-2009 global economic crisis on the tourism sector is based on the following indicators: yearly data on international tourist arrivals and receipts globally, by region/sub region and country; monthly data on international tourist arrivals by country; and quarterly data on employment in hotels and restaurants (ISIC category H, the only proxy available to evaluate employment in the tourism sector). Furthermore, the macro-



analysis included data on international tourism by purpose of visit for selected countries as well as data from a survey conducted by UNWTO on the measures implemented by countries worldwide to mitigate the impact of the crisis on tourism. Key findings from the macro-analysis include:

- The global economic crisis of 2008-2009 had a significant impact on international tourism, the most severe so far in the last decades. International tourist arrivals declined by 4 per cent and international tourism receipts by 6 per cent. In 2010, the sector rebounded strongly (international tourist arrivals grew by 7 per cent) demonstrating the resilience of tourism demand.
- The decline in international tourism in 2009 was felt globally, but specifically affected destinations with a higher dependence on the European and US source markets. All world regions suffered a decline in international tourist arrivals with the exception of Africa. By income level, low-income countries have been less adversely affected by the global crisis and have recovered comparatively faster.
- Business tourism was more affected than other segments, but available information does not allow for a detailed impact analysis by segment.
- Employment in tourism was less impacted and tended to recover quicker than in other economic sectors according to data on employment in hotels and restaurants (the available proxy used in the report to evaluate the impact of the crisis on tourism employment).
- By region, employment declines in hotels and restaurants was limited to advanced economies in Europe and the Americas. Employment growth rates in hotels and restaurants in emerging economies were actually positive during the crisis while in advanced economies, although negative, the decline was weaker than in other sectors.
- Policy measures adopted to mitigate the impact of the crisis in the tourism sector were mostly of a global nature and focused on marketing/promotion, public/private partnerships and a combination of fiscal and monetary measures. Few measures were designed directly focusing on employment in tourism.
- No specific policy measures to mitigate the negative impact of the global crisis on tourism in the employment of the poor and vulnerable were identified. Nonetheless, many global policies aimed at supporting the tourism sector throughout the crisis, and particularly those targeting employment, had an indirect effect on employment levels of the less favoured segments of the population given its contribution to the resilience of the sector.

#### *Results from the Case Studies*

Findings from the three case studies reveal that the decrease in visitor numbers as a result of the global economic crisis had different impacts. Each of the countries studied had to cope with a decrease in international tourist arrivals in 2009, ranging from 4 per cent for the Maldives to 5 per cent for Tanzania and 9 per cent for Costa Rica. The decrease in tourism receipts was even higher (8 per cent for the Maldives, 9 per cent for Tanzania and 10 per cent for Costa Rica) due to two factors: (1) decreases in tourism from high spending source markets (e.g. the United States and the UK) accounted for most of the drop in arrivals, and (2) tourists tended to be more cost-conscious and spend less time in

the country. The impact of such declines on the livelihoods of poor and vulnerable groups as well as the mitigation measures adopted also varied by country:

- In *Costa Rica*, the majority of large chain hotels and domestic tour operators promptly reacted by implementing a number of crisis-mitigating measures in order to reduce fixed costs, including lay-offs, reduced working hours and the enforcement of unpaid leave for two to three months. Social insurance data shows that 3 per cent of the employees working in hotels and restaurants in Costa Rica lost their jobs in 2009 and the overall tourism related work force declined by around 4.5 per cent (representing over 5,000 jobs). In addition, the remaining employees saw their purchasing power reduced by an estimated 12 per cent due to increased prices. Women and low-skilled workers were comparatively more exposed to the negative effects of the crisis than male employees and qualified personnel. The ability of vulnerable groups to cope with the crisis was quite limited. Savings, support from neighbours and the establishment of micro and small businesses helped to face the difficult times, since most low-skilled workers had difficulty finding a new job during the economic downturn.
- The decline in tourism demand and spending in the *Maldives* forced operators in the accommodation industry to adopt cost-reduction strategies that significantly impacted the labour market. Research showed that 1,477 foreign employees (44 per cent of the foreign workforce in hotels and resorts), most of them low-skilled workers from Bangladesh, India, Sri Lanka or the Philippines, lost their jobs during the crisis. Furthermore, an estimated 10 per cent of the domestic labour force in hotels and resorts (representing 1,200 employees) was made redundant. In addition, reduced tourist spending resulted in a significant decrease in the service charge, which is an important part of the income for low-skilled workers, causing income losses of about 20 to 30 per cent for approximately 7,000 Maldivian tourism employees with low-skilled positions. Their purchasing power further diminished by an inflation of 17 per cent between 2008 and 2009. With an average household size of 6 to 7 persons, this study shows that approximately 19 per cent of the Maldivian population, most of them from poor and vulnerable groups, were affected through job losses or decline in income in the tourism sector, resulting in a significant reduction in purchasing power.
- The case study in *Tanzania* focused on Mount Kilimanjaro and the Northern Safari Circuit. The study showed that tour operation in these areas was not dramatically affected by the crisis. Although tourist numbers declined by 2 per cent in Kilimanjaro and by nine per cent in the Northern Safari Circuit, most operators and hotels managed to increase package prices and room rates throughout the crisis. Job losses have been limited for skilled and managerial labourers, yet there has been a significant negative impact on unskilled labour, especially seasonal workers. Direct employment in the tourism sector in Tanzania declined by around 20 per cent between 2007 and 2009 (from 461,500 employees to 369,100 employees). This decline is most likely due to the increase in the minimum wages in January 2008, and many employers might have used the crisis as an excuse to reduce the number of unskilled workers and alter permanent contracts into short-term or seasonal contracts. One group that saw annual incomes significantly decline between 2008 and 2010 were the Kilimanjaro porters. Attracted by the higher salaries per expedition and limited job opportunities in other sectors, the number of porters rose from 12,204 in

2008 to 20,590 in 2010. Together with a lower number of porters hired per expedition this resulted in a sharp decline in the number of trips made per porter and their annual income decreased by 50 per cent. The final group to have been impacted by the crisis was the small stall owners and workers, a group of approximately 28,000 people, which showed a decrease in revenue of around 25 per cent throughout the crisis.

Based on this research, recommendations to mitigate the impact of future crises on the livelihoods of poor and vulnerable groups working in the tourism sector focus on three different aspects.

- First, crisis monitoring could be strengthened through better *generation of tourism and employment data and indicators, in particular on the short-term*. This implies: a) the expansion of basic tourism statistics at national level, b) the development of Tourism Satellite Account (TSA) and c) the development of short-term indicators of tourism performance and employment to serve as early warning systems. Such systems could be developed at the national level with leadership from the national tourism authority and would ideally cover three main areas: 1) monitoring variations on tourism demand (hotels and airlines bookings or credit cards records) and supply (airport slots) globally and by source market; 2) monitoring employment and company performance based on the tourism industries' turn-over and employment information derived from administrative, fiscal or social security record; and 3) business cycle indicators derived from business confidence surveys.
- Second, *measures to improve the long-term resilience of the tourism sector* and accelerate the recovery from decreases in tourism demand are essential to minimize pressure on tourism related labour markets. Increased marketing activities, combined with efforts to diversify market segments, including the development of the domestic tourism market, would help strengthen the sector. Infrastructural improvements, easing of visa regulations and reducing bottlenecks for air access can also help facilitate tourism growth and recovery. Measures to improve the resilience of the sector should be based on active communication, consultation and collaboration between the public, private sector and local communities.
- Third, *specific measures should be taken to mitigate the impact of potential crises in tourism on poor and vulnerable groups who rely on the sector*. Options to be further studied include granting tourism companies additional liquidity to outbalance a crisis-induced decrease of revenues in the short-term, linking credit conditions to employee retention schemes. As tourism SMEs provide a large number of jobs to poor and vulnerable groups, they should be given priority access to economic recovery schemes offered by governments during crisis situations. In times of crisis, special emphasis should be given to training, in particular for women and low-skilled workers, as they generally are more vulnerable to job loss. In order to minimize shocks on low-income households, governments can also pay particular attention to promoting equal distribution of state tourism revenue, e.g. from national parks; to improving working conditions of unskilled and low-skilled employees; and to introducing and/or improving social insurance schemes.

### III. Key Challenges

At the macro-level, data availability, particularly short-term data availability, was a major constraint to the extent and scope of the research. This is particularly true for:

- International tourism data in developing countries (international tourist arrivals and receipts)
- Domestic tourism data at the global and national level
- Detailed comparable short term tourism data by motivation, segment and source markets
- Employment- related data, particularly in developing countries

Similarly, the case studies faced limited data availability on the performance of the tourism industry in both source and destination countries. In particular, reliable data on employment were difficult to obtain. Further, as only a few crisis-mitigating policy and business measures could be identified in the case study countries, it was difficult to undertake a comprehensive assessment of their effectiveness. As most of the field research was carried out in the course of 2010, it was not yet possible to fully understand the recovery process, and to assess if the poor and vulnerable groups that had been affected by the crisis, also benefited from the tourism recovery. In order to carry out an in-depth analysis of the recovery process of the tourism industry, and to give further guidance to public and private sector stakeholders to mitigate the impact of future crises on poor and vulnerable households, further research is recommended addressing the following topics:

- The recovery process of the tourism sector, in particular the identification of factors that helped accelerate or slow down the recovery;
- Mechanisms for multi-stakeholder collaboration to enhance crisis resilience in the tourism sector; and
- Identification and assessment of further measures to mitigate impacts of economic crisis for poor and vulnerable groups employed in the tourism sector.

Case study countries could be identified based on tourism statistics pointing at remarkable tourism recovery processes in selected destinations and first hand experiences provided by UNWTO Members States on crisis mitigation and recovery. The results of such work could serve as an input to advanced action plans for interventions in selected countries, focusing on multi-stakeholder collaboration, resilience and mitigation.

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