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Risk and Opportunity
Managing Risk for Development



THE WORLD BANK

Risk and Opportunity

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Foreword

In recent years, the world has suffered a multitude of crises. Financial and economic turmoil have disrupted the world economy through loss of income, jobs, and social stability. Intense natural disasters have devastated entire communities from Haiti to Japan, leaving a trail of fatalities and economic losses in their wake. Concerns about global warming have grown, as have fears about the spread of deadly contagious diseases.

As I travel around the world, I hear the same concern: how can we become more resilient to such risks? The *World Development Report 2014 (WDR 2014), Risk and Opportunity—Managing Risk for Development*, helps provide answers to this pressing question.

Another concern is the missed development opportunities that arise when necessary risks are not taken. Pursuing opportunities requires taking risks, but many people, especially the poor, are often reluctant to do so, because they fear the potential negative consequences. Failure to act can trap people in poverty, leaving them vulnerable to negative shocks and even less able to pursue opportunities that would otherwise improve their well-being.

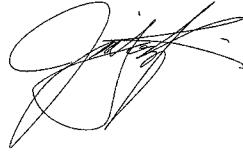
The inability to manage risk properly leads to crises and missed opportunities. This poses significant obstacles to attaining the World Bank Group's two main goals: ending extreme poverty by the year 2030 and boosting shared prosperity of the bottom 40 percent of the population in developing countries. Managing risk effectively is, therefore, absolutely central to the World Bank's mission. The *WDR 2014* demonstrates that effective risk management can be a powerful instrument for development—it can save lives, avert economic shocks, and help people build better, more secure futures.

This report calls for individuals and institutions to move from being “crisis fighters” to becoming “proactive and systematic risk managers.” There is substantial evidence that recognizing and preparing for risk can pay off abundantly. For instance, many developing countries displayed resilience in the face of the recent global financial crisis because they had previously reformed their macroeconomic, financial, and social policies.

Protecting hard-won development gains by building resilience to risk is essential to achieving prosperity. That is true whether one is grappling with natural disasters, pandemics, financial crises, a wave of crime at the community level, or the severe illness of a household's chief provider. Risk can never be completely eliminated. But people and institutions can build resilience to risk by applying a balanced approach that includes structural policy measures, community-based prevention, insurance, education, training, and effective regulation. Countries have learned how to manage risk in diverse settings, but, until now, research related to risk management in the developing world has not been synthesized into a single source that is easily accessible and well-referenced.

This *WDR* aims to fill that gap. It serves as a valuable guide both for mainstreaming risk management into the development agenda, and for helping countries and communities strengthen their own risk management systems. The Report also offers important insight for changing the approach to risk in the Bank's own operations. The World Bank Group is currently undergoing a transformation, which calls for shifting the institutional culture regarding risk from one of extreme risk aversion to one of informed risk taking. This year's *WDR* cautions that the greatest risk may be taking no risk at all. I could not agree more.

My hope is that the *WDR 2014* will lead to risk management policies that allow us to minimize the danger of future crises and to seize every opportunity for development. Success on this front will help us build the world we all want: one free of poverty, with shared prosperity for all.

A handwritten signature in black ink, appearing to read 'J. Kim', with a large, stylized flourish extending from the end.

Jim Yong Kim
President
The World Bank Group

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OVERVIEW

Risk and opportunity

*Risk management can be a powerful
instrument for development*

Managing risk for a life full of opportunities: a mother protects her child against malaria with a bed net in Ghana.

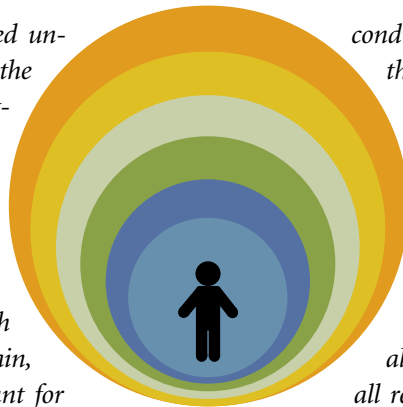


Risk and opportunity

Risk management can be a powerful instrument for development

The past 25 years have witnessed unprecedented changes around the world—many of them for the better. Across the continents, many countries have embarked on a path of international integration, economic reform, technological modernization, and democratic participation. Although challenges and inequalities remain, economies that had been stagnant for decades are growing, people whose families had suffered deprivation for generations are escaping poverty, and hundreds of millions are enjoying the benefits of improved living standards and scientific and cultural sharing across nations. As the world changes, a host of opportunities arise constantly. With them, however, appear old and new risks, from the possibility of job loss and disease to the potential for social unrest and environmental damage. If ignored, these risks can turn into crises that reverse hard-won gains and endanger the social and economic reforms that produced these gains. The solution is not to reject change in order to avoid risk but to prepare for the opportunities and risks that change entails. Managing risks responsibly and effectively has the potential to bring about security and a means of progress for people in developing countries and beyond.

The World Development Report (WDR) 2014 focuses on the process of risk management, addressing these questions: why is risk management important for development, how should it be conducted, what obstacles prevent people and societies from



conducting it effectively, and how can these obstacles be overcome? The WDR 2014's value added resides in its emphasis on managing risks in a proactive, systematic, and integrated way. These characteristics underscore the importance of forward-looking planning and preparation in a context of uncertainty. They also highlight the necessity to address all relevant risks jointly, using all available tools and institutions. From a policy maker's perspective, a proactive, systematic, and integrated approach to managing risks involves striking a proper balance between the contribution from the state and the contribution from individuals, civil society, and the private sector, with the goal of ensuring that these contributions are coordinated and complementary.

The WDR 2014 argues that risk management can be a powerful instrument for development—not only by building people's resilience and thus reducing the effects of adverse events but also by allowing them to take advantage of opportunities for improvement. The WDR 2014 is not devoted to a detailed analysis of specific risks. Its framework, however, can be implemented to address particular, relevant sets of risks in given regions and countries. Focusing on the process of risk management allows the WDR 2014 to consider the synergies, trade-offs, and priorities involved in addressing different risks in different contexts, with the single motivation of boosting development (box 1).

BOX 1 *Five key insights on the process of risk management from the World Development Report 2014*

1. Taking on risks is necessary to pursue opportunities for development. The risk of inaction may well be the worst option of all.
2. To confront risk successfully, it is essential to shift from unplanned and ad hoc responses when crises occur to proactive, systematic, and integrated risk management.
3. Identifying risks is not enough: the trade-offs and obstacles to risk management must also be identified, prioritized, and addressed through private and public action.
4. For risks beyond the means of individuals to handle alone, risk management requires shared action and responsibility at different levels of society, from the household to the international community.
5. Governments have a critical role in managing systemic risks, providing an enabling environment for shared action and responsibility, and channeling direct support to vulnerable people.

Source: WDR 2014 team.

Risk is a burden but also an opportunity

Why worry about risk? In recent years, a multitude of crises have disrupted the world economy and have had substantial negative consequences on development. Because of the 2008–09 global financial crisis, most economies around the world experienced sharp declines in growth rates, with ensuing loss of income and employment and setbacks in efforts to reduce poverty. When food prices spiked in 2008, riots broke out in more than a dozen countries in Africa and Asia, reflecting people’s discontent and insecurity and causing widespread political unrest. The 2004 Asian tsunami, the 2010 earthquake in Haiti, and the 2011 multiple hazard disaster in northeastern Japan—to name but a few—have left a trail of fatalities and economic losses that exemplify the increased frequency and intensity of natural disasters. Concerns about the impact of climate change worldwide are growing, and so are fears about the spreading of deadly contagious diseases across borders. Indeed, the major economic crises and disasters that have occurred in recent years and those that may occur in the future underscore how vulnerable people, communities, and countries are to systemic risks, especially in developing nations.

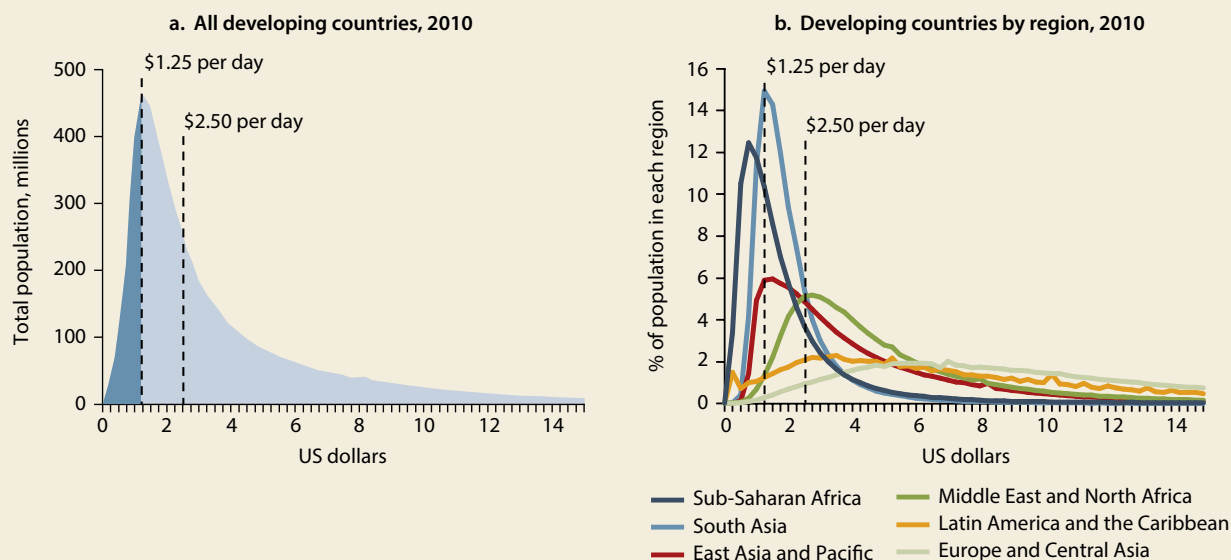
Idiosyncratic risks, which are specific to individuals or households, are no less important for people’s welfare. Losing a job or not finding one because of inadequate skills, falling victim to disease or crime, or suffering a family breakup from financial strain or forced migration can be overwhelming, particularly for vulnerable families and individuals. Households in Ethiopia whose members experienced serious illness, for example, were forced to cut their con-

sumption by almost 10 percent and continued to be negatively affected three to five years later.¹ Health costs from high levels of crime and violence amount to 0.3–5.0 percent of gross domestic product (GDP) a year for countries in Latin America, without even considering the impact of crime on lost output stemming from reduced investment and labor participation.² Loss of employment in countries as different as Argentina, Bulgaria, and Guyana not only has lowered income and consumption but has also reduced people’s ability to find new work, worsened social cohesion, and in some cases increased domestic violence.³

Whether adverse consequences come from systemic or idiosyncratic risks, they may destroy lives, assets, trust, and social stability. And it is often the poor who are hit the hardest. Despite impressive progress in reducing poverty in the past three decades, a substantial proportion of people in developing countries remain poor and are vulnerable to falling into deeper poverty when they are struck by negative shocks (figure 1). The mortality rate from illness and injury for adults under age 60 is two and a half times higher for men and four times higher for women in low-income countries than in high-income countries, while the rate for children under age five is almost twenty times higher.⁴ Mounting evidence shows that adverse shocks—above all, health and weather shocks and economic crises—play a major role in pushing households below the poverty line and keeping them there.⁵ Moreover, realizing that a negative shock can push them into destitution, bankruptcy, or crisis, poor people may stick with technologies and livelihoods that appear relatively safe but are also stagnant.

FIGURE 1 Many people around the world are poor or live very close to poverty; they are vulnerable to falling deeper into poverty when they are hit by negative shocks

More than 20 percent of the population in developing countries live on less than \$1.25 a day, more than 50 percent on less than \$2.50, and nearly 75 percent on less than \$4.00.



Source: WDR 2014 team based on data from World Bank PovcalNet (database).

Note: \$1.25 per day is a widely used measure of extreme poverty. However, \$2.50 per day is considered a more relevant measure of extreme poverty for some regions, such as Latin America and the Caribbean. See Ferreira and others 2013.

Yes, confronting risk, as the possibility of loss, is a burden—but it is also necessary to the pursuit of opportunity. Risk and opportunity go hand in hand in most decisions and actions taken by countries, enterprises, and families as they seek to improve their fate. Indeed, risk taking is intrinsic to the process of development. Consider a few examples. Since the 1990s, most developing countries have opened their borders to seek international integration and higher economic growth, but in the process they have also increased their exposure to international shocks. Firms around the world have made investments to upgrade their technologies and increase profitability, but the debt required to do so has made them more vulnerable to changes in demand and credit conditions. From Brazil to South Africa, millions of families have migrated to cities to seek better job opportunities and health and education services, where they have also become more exposed to higher crime and benefit less from communal support. The motivation behind these actions is the quest for improvement, but risk arises because favorable outcomes are seldom guaranteed.

Risk management can be a powerful instrument for development

Whether risks are systemic or idiosyncratic, imposed or taken on voluntarily, development can occur only by successfully confronting risk and pursuing opportunity. Many crises and development losses are the result of mismanaged risks. No less important, many opportunities are missed because preparation for risk is insufficient and necessary risks are not taken—the “risk of inaction.” It is therefore essential to shift from unplanned and ad hoc responses when crises occur to proactive, systematic, and integrated risk management. As such, risk management can build the capacity to reduce the losses and improve the benefits that people may experience while conducting their lives and pursuing development opportunities (drawing 1 and profile 1).

Risk management can save lives. Consider the case of Bangladesh, where improved preparation for natural hazards has dramatically reduced loss of life from cyclones. In the past four decades, three major cyclones of similar magnitude have hit Bangladesh.

DRAWING 1 Risk management for everyone: A visual representation of key concepts



PROFILE 1 *The Gomez family: A modern tale of risk and resilience*

The Gomez family lives in a shantytown on the outskirts of Lima. Only a few years ago, the family lived in a rural village in the Peruvian Andes, where they had a small farm. The region was prone to droughts, and they could never earn enough income to escape poverty. Many of their neighbors had migrated to the city in the 1980s, pushed by civil conflict in the countryside. The Gomez family refused to go for fear of losing their land and finding nothing better in the city. The risk was too large. Peru was a different place then: inflation and unemployment were rampant, and the threat of social unrest was ever present.

In the 1990s, the macroeconomy was stabilized and the civil war ended. New opportunities started to arise in urban and rural areas. At first, these opportunities eluded the Gomez family. A dam had been constructed near their village, but using its waters required the renovation of canals on their farm. They applied for a loan from a commercial bank but were denied, which came as no surprise since it was their first time applying. Mr. and Mrs. Gomez came to believe that their children had no future in the village and decided to migrate to the city. This time, however, they did not have to worry about losing their farm. They had been given a property title and were able to sell the farm to a neighbor, who had the capital to renew the canals. The money from the farm would give the Gomezes a cushion as they took the momentous challenge of migration.

Lima, with just under 10 million inhabitants, seemed like a huge and inhospitable place. That is why they decided to move to the shantytown where many members of their village had relocated. There, they would find companionship, cultural identity (all the festivals of their old village were properly celebrated here), and, of course, help finding a job. Mr. Gomez found work on a construction site, but it was irregular, with frequent layoffs. Mrs. Gomez had to pitch in, and she was fortunate to find work as a seamstress in a textile enterprise. The grandmother helped out, taking care of the children when they returned

from school. Having two income earners (and a willing grandmother) made the Gomez household more resilient to whatever might happen.

And things did happen. Mario, the eldest son, was injured in a traffic accident. There was no car insurance, and the family had to bear the cost of Mario's medical treatment. They could not have done it alone, and they didn't have to. They relied on a public hospital, run and financed by the state. Medical treatment there was of uneven quality, but it provided basic services. The family had to spend some of their limited savings to supplement the hospital services and buy medication, but all that was worth it because Mario recovered.

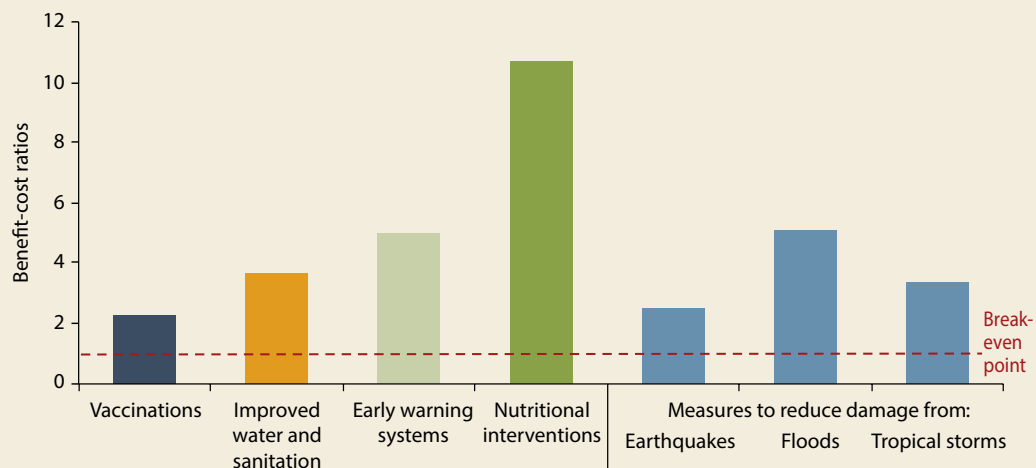
The Gomezes had to dig into their assets once again, but this time for a very different purpose. Elena—the second daughter, whom everyone regarded as the brains in the family—came home one day and asked her parents if she could study English in the evenings. This was a good idea. Peru had recently signed several free trade agreements (one of them with the United States), and exporting companies had started to grow, offering jobs to young, qualified people. English would be a big plus.

Some months before, however, her parents would have declined her initiative on the grounds that it was not safe to be out at night. Police protection was scarce in the outskirts of the city, and criminals took advantage of that. When a crime wave eventually affected the Gomezes' shantytown, the community put together neighborhood patrols (effective, although at times unduly harsh). When Elena asked for English classes, the safety risk had been reduced, and she could go out to study in the evenings. As time passed, she and her family would be well prepared to benefit from the period of stability and sustained growth that Peru was experiencing.

Confronting risks and seizing opportunities may have put the Gomez family on the path out of poverty, possibly forever. It was their work, initiative, and responsibility that made it possible, but they could not have done it alone.

Source: WDR 2014 team.

Note: A video of this fictional story is available in nine languages on the *World Development Report 2014* website <http://www.worldbank.org/wdr2014>.

FIGURE 2 *The benefits of risk management often outweigh the costs*

Source: Wethli 2013 for the WDR 2014.

Note: The figure shows the median of benefit-cost ratios across a range of studies in each category (with a minimum of at least four estimates in each category). Above the dotted line, expected benefits exceed expected costs. The range of estimates within each category can be substantial, reflecting a diversity of intervention types and locations, and the sensitivity of estimates to variations in underlying assumptions. However, in almost all cases, even the 25th percentile of the ranges are above the break-even point.

A cyclone in 1970 claimed over 300,000 lives, but one in 1991 claimed almost 140,000, and one in 2007 claimed about 4,000. Casualties have been greatly reduced by a nationwide program to build shelters—from only 12 shelters in 1970 to over 2,500 in 2007—along with improved forecasting capacity and a relatively simple but effective system for warning the population.⁶

Risk management can avert damages and prevent development setbacks. Countries as different as the Czech Republic, Kenya, and Peru offer recent compelling examples where macroeconomic preparation has shielded the economy from the negative effects of a global financial crisis. Having achieved lower fiscal deficits, disciplined monetary policy, and lower current account deficits, these countries experienced a smaller decline in growth rates in the aftermath of the 2008 international crisis than they did following the 1997 East Asian crisis. The same beneficial effect of macroeconomic preparation seems to have occurred in many other low- and middle-income countries.⁷

Risk management can unleash opportunity. Risk management tools—such as improved information, crop insurance, and employment diversification—can help people mitigate risk. The ability to mitigate risk, in turn, can allow people, especially the poor, to overcome their aversion to risk and be more willing

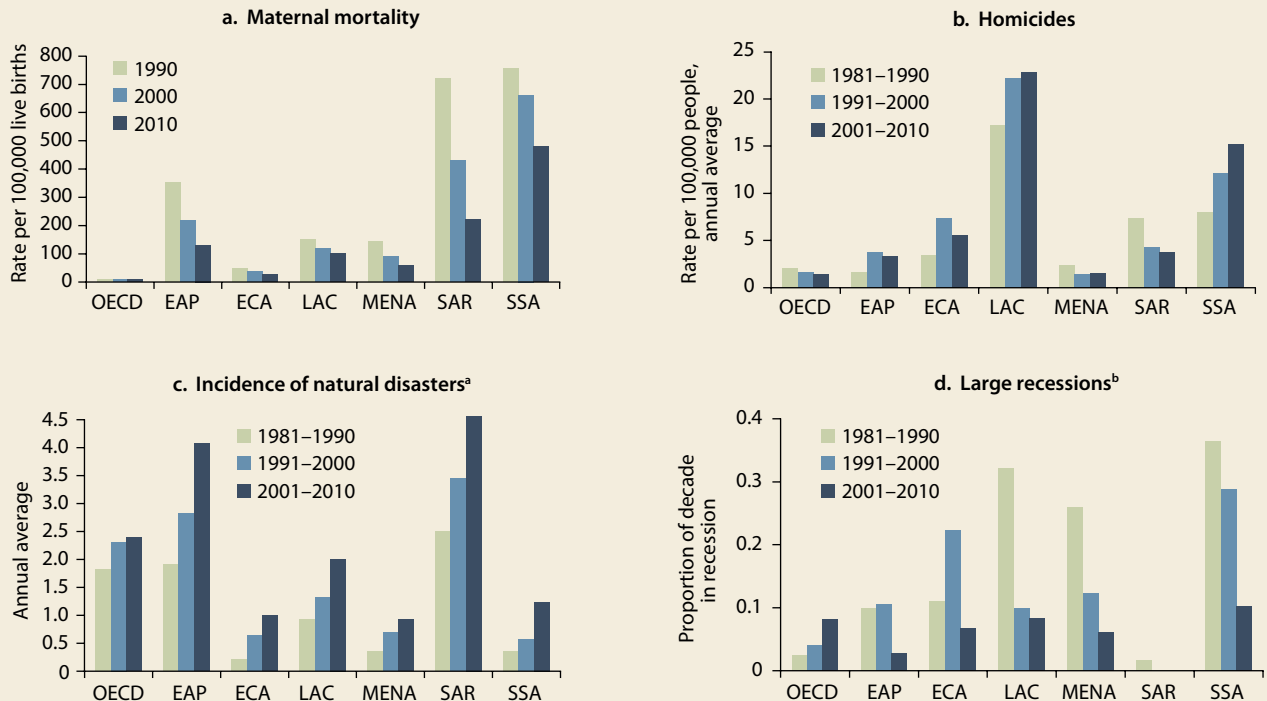
to undertake new promising ventures. Some farmers in Ethiopia, for instance, choose not to use fertilizer because they fear drought and other potential shocks and thus prefer to retain savings as a cushion rather than investing in intermediate inputs.⁸ In contrast, farmers in Ghana and India have been more willing to take on risk in search of higher yields—increasing their investments in fertilizer, seeds, pesticides, and other inputs—because they have rainfall insurance.⁹ When aggregated, these gains can have much broader effects, contributing to improved productivity and growth for a country as a whole.

Crises and losses from mismanaged risks are costly, but so are the measures required to better prepare for risks. So, does preparation pay off? Benefit-cost analyses across a number of areas suggest that risk preparation is often beneficial in averting costs, sometimes overwhelmingly so (figure 2). There seems to be a lot of truth in the old adage that “an ounce of prevention is worth a pound of cure.” For example, a regimen of mineral supplements designed to reduce malnutrition and its related health risks may yield benefits at least 15 times greater than the cost of the program.¹⁰ Similarly, improving weather forecasting and public communication systems to provide earlier warning of natural disasters in developing countries could yield estimated benefits 4 to 36 times greater than the cost.¹¹

BOX 2 A risky world: Trends in risk across regions

The risks that people face have changed considerably over time, although this evolution has sometimes varied across regions. Risks have eased in some areas—such as maternal health, where the mortality rate has declined in all regions. Conversely the incidence of crime has increased substantially in Latin America and Sub-Saharan Africa. Strikingly, the incidence of natural disasters has increased in

every region of the world. While Latin America, the Middle East and North Africa, and Sub-Saharan Africa all have suffered significantly fewer years of recession in each decade since the 1980s, Organisation for Economic Co-operation and Development (OECD) countries have experienced more.



Source: WDR 2014 team based on data from World Bank World Development Indicators (database); EM-DAT OFDA/CRED International Disaster Database; United Nations Office on Drugs and Crime Homicide Statistics (database).

Note: Figures show the simple average across countries in each region. OECD countries in the figure are high-income countries that have been members of the OECD for at least 40 years. All other countries are grouped into geographic regions. EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SAR = South Asia; SSA = Sub-Saharan Africa.

a. Natural disasters include droughts, earthquakes, floods, and tropical storms.

b. Large recessions are identified by following Barro and Ursúa 2012 and using as a threshold a 5 percent decline in GDP per capita growth from peak to trough. There were no large recessions in South Asia from 1991 to 2010.

Comparing the cost-effectiveness of preparing for risk with that of coping with its consequences is one of the important trade-offs that must be assessed. The choice between these actions depends in part on how the (certain) costs of preparing for risk compare to the (often uncertain) benefits of doing so.¹² In addition, risk management requires considering different risks and the relative need of preparing for each of them (box 2). Given limited resources, setting priorities and making choices

is both unavoidable and necessary. For instance, a family living in a violence-ridden community faces safety, health, and property risks and must choose how to allocate its limited budget to protect and insure against each of these risks. Likewise, a small country prone to torrential rains and also exposed to international financial shocks must decide how much to spend in flood prevention infrastructure and how much to save to counteract the effects of financial volatility.

When risks are taken on voluntarily in the pursuit of opportunity, another trade-off emerges: expected returns must be weighed against the potential losses of a course of action. This trade-off is intensified when a higher return is possible only if more risk is accepted. That is often the case with financial investments, where a lower yield is characteristic of a more secure position, and higher yields with riskier positions.¹³ A risk-return trade-off may also be *perceived* for certain development actions: for instance, public opinion and certain experts may link the pursuit of higher economic growth with lower environmental protection or higher inequality.¹⁴ Although this and other risk-return trade-offs may not be present, risk management entails addressing them as a legitimate possibility.

Risk management involves not only considering trade-offs but also taking synergies into account. These can make both preparation for and consequences of risk less costly. They can also diminish risks and increase expected benefits. These “win-win” situations are widespread and should be emphasized—which is not to say that they are costless or always easy to implement. Investments in nutrition and preventive health, for example, make people more productive while reducing their vulnerability to disease.¹⁵ Similarly, improvements in the business environment, such as streamlining regulations and improving access to credit, can induce the enterprise sector to become more dynamic and grow more quickly, while also making it more resilient to negative shocks.¹⁶ At the macroeconomic level, disciplined monetary and fiscal policies—reflected in moderate inflation and sustainable public deficits—accelerate economic growth while reducing high volatility in the face of external and domestic shocks.¹⁷

What does effective risk management entail?

As the ancient Greek philosopher Heraclitus wrote, the only thing constant is change. And with change comes uncertainty. Faced with choices for bettering their lives, people make virtually every decision in the presence of uncertainty. Young people decide what to study or train for without knowing exactly what jobs and wages will be available when they enter the labor market. Adults decide how much and how to save for retirement in the face of uncertain future income and investment returns, health conditions, and life spans. Farmers decide what to cultivate and what inputs to use not knowing with certainty whether there will be enough rain for their crops and what demand and

prices their products will command in the market. And governments decide the level of policy interest rates and fiscal deficits in the presence of uncertain external conditions, domestic productivity growth, and changes in financial markets.

The analysis of choice under uncertainty in economics and public policy

It is only natural, therefore, that the analysis of choice under uncertainty and scarce resources has been at the heart of economics and public policy for centuries. The basic approach to decision under uncertainty—introduced by Daniel Bernoulli in the 1700s and modeled formally by John von Neumann and Oskar Morgenstern in 1944—is based on the notion that individuals optimize the expected “utility” (or subjective perception of welfare) of possible outcomes.¹⁸ This expected utility approach relies on individuals making rational choices, based on their preferences for risk and their knowledge of potential outcomes and respective probabilities.

Notwithstanding its valuable insights, this approach has been challenged on two important grounds. The first is that individuals do not seem to operate in a fully rational manner, possibly because uncertainty makes the decision process so complicated that people prefer simple behavioral rules that evolve over time but are not always optimal. The work of Maurice Allais in the 1950s and Daniel Kahneman and Amos Tversky in the 1970s focused attention on the limitations and innate tendencies of human behavior when confronting decisions under uncertainty.¹⁹

The second challenge to the basic expected utility approach is that individuals do not make decisions in isolation but in groups, mainly because the potential outcomes can be greatly affected by how people act in coordination with others. The work of Duncan Black in the 1940s and James Buchanan and Mancur Olson in the 1960s emphasized the shortcomings of and obstacles to collective action.²⁰ Although originally concerned with the state’s provision of public goods, the public choice approach extends to actions taken by any group, from households to communities of any size. The basic insight is how valuable and at the same time elusive it is to coordinate collective action, especially in the face of uncertainty.

A different strand of the economics literature is also concerned with the collective action problem and offers critical principles to overcome them. In their pioneering work in the 1960s and 1970s, Leonid Hurwicz, Roger Myerson, and Eric Maskin

studied the problem of mechanism design to achieve efficiency in markets, organizations, and institutions. The critical insight here is that incentive constraints should be considered as important as resource constraints in understanding decision making in the presence of uncertainty.²¹ This insight is vital when developing the best ways to coordinate the collective action of any group, especially under asymmetric information, diverging interests, and limited knowledge. It forces analysts and policy makers to see beyond aggregate resources and question what informs and motivates the actions of people and organizations, including actions related to managing risk.

An analytical framework for risk management

The insights derived from the economics of decision under uncertainty provide an analytical framework for risk management. The *World Development Report 2014* proposes that this framework consists of several interrelated steps:

- Assessing the fundamental goals of and motivations for risk management: that is, resilience in the face of adverse events and prosperity through the pursuit of opportunities (discussed in the first two sections above).
- Understanding the environment in which risks and opportunities take place (referred to below as the risk chain).
- Considering what risk management entails: that is, preparing for and coping with both adverse and positive events (presented below under “The components of risk management”).
- Assessing the main obstacles that individuals and societies face in managing risk, including constraints on resources, information, and incentives (discussed below in the section entitled “Beyond the ideal”).
- Introducing the potential role of groups and collective action at different levels of society to overcome the obstacles that people encounter in managing risk (presented below in the section “The way forward”).

Understanding the environment in which risks and opportunities arise: The risk chain

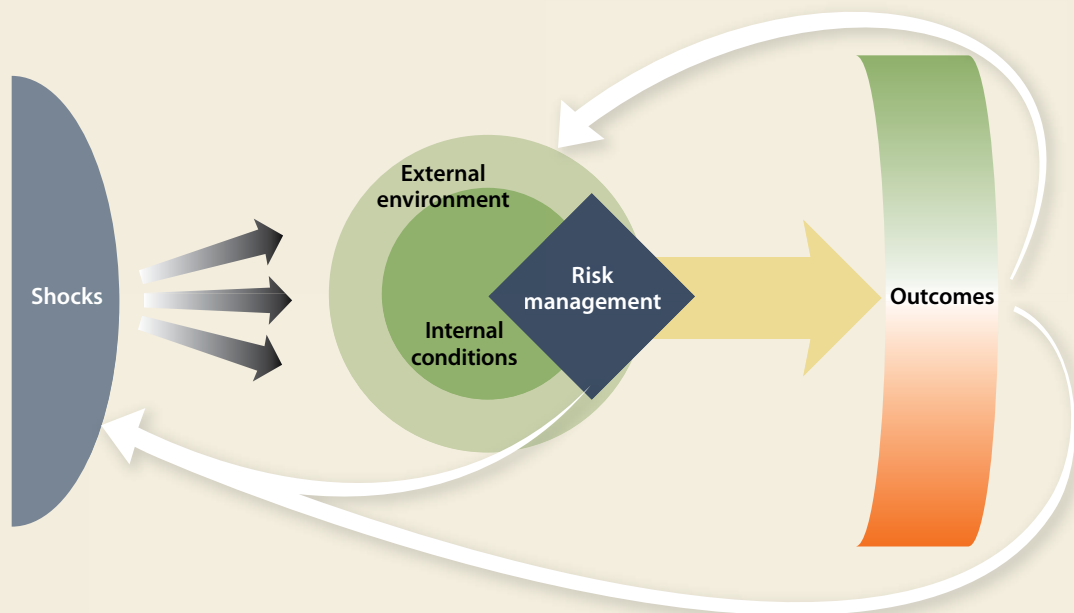
The world is constantly changing and generating shocks that affect individuals and societies. *Shocks*

may be positive (such as abundant rainfall or a wind-fall in terms of trade) or negative (illness or war). They may affect small groups (such as a family or a rural community) or large ones (a region or a country). And they may occur suddenly (such as natural hazards or financial shocks) or gradually (such as demographic transitions, technological trends, or environmental changes). Whether the *outcomes* from those shocks are positive or negative, large or small, individualized or widespread, depends on the interaction between shocks and the internal and external conditions that characterize a social and economic system (such as a household, a community, or a country). Importantly, the effect of shocks on people’s outcomes is also mediated by their actions to prepare for and confront risk.

This interaction can be represented by a risk chain (diagram 1), which can be applied to different types of risks and contexts.²² For example, whether someone becomes ill during a pandemic depends on how contagious the virus is (the initial shock); population density and living conditions in given areas (the external environment or exposure); people’s individual susceptibility (internal conditions, such as their age or the strength of their immune system); and the steps they take to prevent becoming sick or contaminating others, such as frequently washing their hands or wearing a face mask (risk management). Similarly, whether an enterprise can successfully take advantage of new technology and innovation depends on the characteristics of the technology (the initial shock); the infrastructure in the country, which may affect the enterprise’s access to the technology (the external environment); how innovative the enterprise is (internal conditions); and how much capital the enterprise has accumulated and how informed it is about the benefits and potential drawbacks of the new technology (risk management).

In this context, *risk* is defined as the possibility of loss. Risk is not all bad, however, because taking risks is necessary to pursue opportunity. *Opportunity* is defined as the possibility of gain, thus representing the upside of risk. People’s *exposure* to risk is determined by their external environment. For example, whether a house is exposed to the risk of coastal flooding depends on its location. *Vulnerability* occurs when people are especially susceptible to losses from negative shocks because of a combination of large exposure, weak internal conditions, and deficient risk management. For example, a highly leveraged financial institution that has taken very risky positions without counterbalancing hedges is vulnerable

DIAGRAM 1 *The risk chain: The nature and extent of outcomes depend on shocks, exposure, internal conditions, and risk management*



Source: WDR 2014 team.

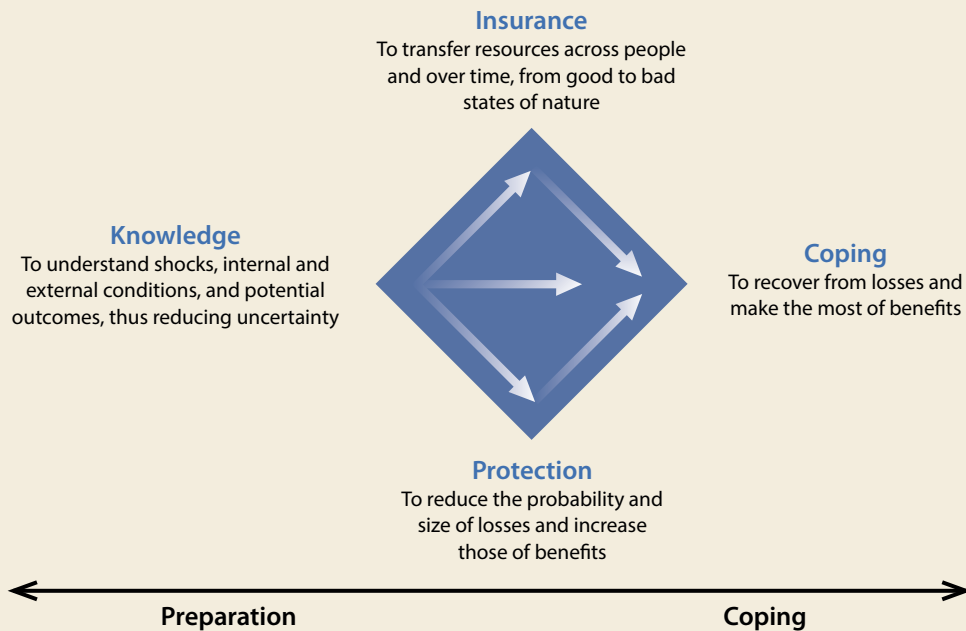
Note: The feedback arrows in the risk chain diagram represent the potential for the outcomes of past shocks to affect exposure and internal conditions, as well as the propensity for future shocks. Similarly, the effectiveness of people's risk management can significantly affect the nature of and propensity for future shocks.

to an economic or financial shock. Likewise, a poor household with few assets and volatile income may be especially vulnerable to increased food prices.

Risk management is the process of confronting risks, preparing for them, and coping with their effects. *Resilience* is characterized by the ability of people, societies, and countries to recover from negative shocks, while retaining or improving their ability to function. Much of the emerging literature on risk in a development context emphasizes the important role that risk management can play in increasing resilience to negative shocks. However, to increase prosperity and well-being, risk management also has an essential role in helping people and countries successfully manage positive shocks. Indeed, successfully managing positive shocks is a critical part of increasing people's resilience to negative shocks over time. For example, a farmer's ability to withstand a drought may be substantially influenced by how the yields from years of good rainfall were managed. Thus the goal of risk management is to both decrease the losses and increase the benefits that people experience when they face and take on risk.

The components of risk management: Preparation and coping

To achieve that goal, risk management needs to combine the capacity to prepare for risk with the ability to cope afterward—taking into account how the up-front cost of preparation compares with its probable benefit. Building on the seminal contribution from Isaac Ehrlich and Gary Becker, *preparation* should include a combination of three actions that can be taken in advance: gaining knowledge, acquiring protection, and obtaining insurance.²³ Once a risk (or an opportunity) materializes, people take action to deal with what has occurred through *coping* (diagram 2). A strong risk management strategy would include all four of these components: knowledge, protection, insurance, and coping. They interact with each other, potentially improving each other's quality. For instance, better knowledge can lead to more efficient decisions regarding the allocation of resources between insurance and protection. Likewise, better insurance and protection can make coping less difficult and costly. Several obstacles, however, often make this risk management strat-

DIAGRAM 2 *The interlinked components of risk management*

Source: WDR 2014 team.

egy difficult to achieve in practice, as is discussed in more detail below.

Knowledge

Obtaining knowledge and thus reducing the uncertainties that people face when they confront risk and pursue opportunities is the first component of risk management. Knowledge entails more than just amassing information: while obtaining information about possible events and their likelihoods is necessary, knowledge also involves using that information to assess exposure to those events and possible outcomes and then deciding how to act. Knowledge therefore contains elements of assessment and judgment. Furthermore, people's knowledge of risk depends not only on the information they can access but also on the quality of information that is provided by other social and economic systems. Indeed, public policy has an important role to play in improving the availability, transparency, and reliability of information that may be relevant for risk preparation, including national account and labor statistics, various market signals, and weather forecasts, among others. Moreover, the state can contribute by reducing the uncertainty that can be created by erratic policies, protracted implementation of reforms, and frequent regulatory changes.

While knowledge of risks often has been lacking in developing countries, it is increasing in several key areas, such as dealing with disease, economic cycles, and natural hazards. And new technologies are greatly helping to improve knowledge of potential shocks and inform responses to them. Farmers in Ghana and 15 other African countries, for example, receive specific market information through their mobile phones, which helps them improve their response to changes in agricultural prices and demand.²⁴ Globalization and scientific advances have also improved understanding of many pathogens, including how they can be detected and diagnosed rapidly to enable disease control. Improved technologies have also supported greater collaboration among scientists and policy makers, as well as enabling the media to inform people, even in remote parts of the world.

Protection

Protection includes any actions that lower the probability and size of negative outcomes or increase the probability and size of positive outcomes. Developing countries have made substantial improvements in some aspects of their risk protection in recent decades. The percentage of people in low- and middle-income countries with access to improved sanitation,

for instance, increased from 36 percent in 1990 to 56 percent in 2010; meanwhile, the immunization rate for measles doubled from 41 percent to 83 percent between 1985 and 2010.²⁵ Improved sanitation and increased vaccinations, alongside other preventive health measures, have helped reduce infant and maternal mortality rates. Similarly, following repeated cycles of high inflation during the 1970s and 1980s, many developing countries established sound fiscal and monetary policy frameworks, which have helped reduce the intensity and incidence of large recessions (see box 2). Increased use of early warning systems has helped to protect populations exposed to natural hazards, reducing fatalities when major events occur.

Insurance

To the extent that protection cannot completely eliminate the possibility of negative outcomes, insurance can help cushion the blow from adverse shocks. Insurance includes any instruments that transfer resources across people or over time, from good to bad states of nature. In certain cases, insurance for particular risks is provided by specialized markets in the financial system. However, because formal insurance markets are often not widely available in developing countries, a larger burden is placed on self-insurance, which is often pursued through relatively costly and inefficient means, such as holding durable assets (like jewelry) that can be sold in the event of a shock. Large numbers of households also participate in informal, community-based risk sharing, and microfinance and microinsurance programs are increasingly providing new instruments that help people manage risk. Similarly, alongside traditional safety nets, conditional cash transfers and other social insurance programs are a means for the state to transfer resources to help the most vulnerable cope with adverse circumstances.²⁶

There may be either synergies or trade-offs between insurance and protection as strategies to manage risk. To the extent that having insurance reduces people's incentives to prevent bad states from occurring, insurance and protection act as substitutes for each other. However, when the steps that people take to attain protection facilitate or make it cheaper to insure against adverse outcomes, protection and insurance can complement each other.²⁷ Being a non-smoker, for instance, can make it easier and cheaper to obtain health insurance. Protection often must be observable for insurance and protection to be complements. While observability is already highly relevant for informal risk sharing in communities, technology may also make it increasingly relevant for

formal insurance. For example, new devices for cars can allow insurers to vary the insurance premiums they charge based on the quality of people's driving.²⁸

Together, knowledge, insurance, and protection constitute preparation. The assets of households, communities and governments, as well as services provided by markets and the public sector, all influence preparation for risk, which in turn affects outcomes. Overall, the extent of people's preparation for risk tends to be correlated with national income across countries. However, interesting variations within regions highlight the important role of policy in determining preparation for risk, over and above access to resources (box 3).

Coping

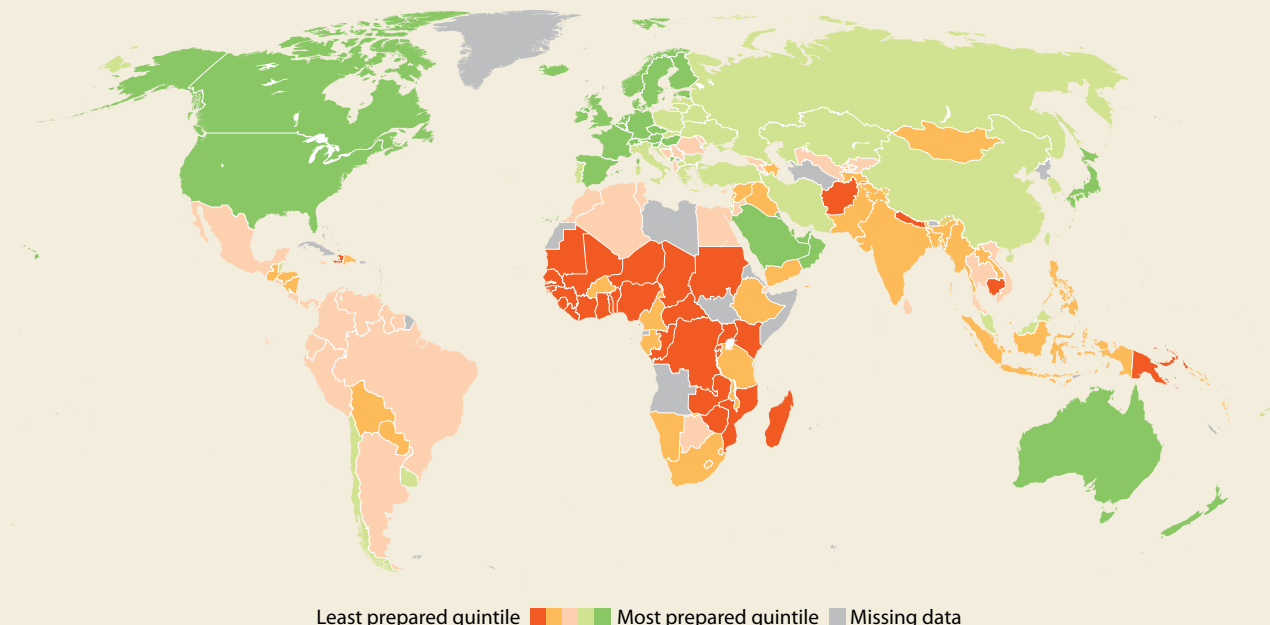
The final component of risk management is coping, which encompasses all actions that are taken once a risk (or, alternatively, an opportunity) has materialized. Coping, therefore, consists of deploying the knowledge, protection, and insurance resources that have been obtained during the preparation phase. The relationship between coping and preparation becomes very fluid when confronting an evolving risk. This includes updating relevant knowledge by monitoring and assessing emerging risks and then adapting and implementing any necessary and available responses.

The choice of how much to prepare for risk has implications for the kind of coping that is needed, which, in turn, can contribute to vicious or virtuous circles in risk management. When effective preparation limits the damages from adverse shocks, coping can be minimal—leaving more resources available for further investments in risk management, reducing vulnerability to future shocks, and so on. At the household level, for instance, having health insurance can facilitate medical treatment and recovery, while reducing out-of-pocket expenses, when a family member falls ill or suffers an accident. At the macroeconomic level, evidence suggests that by reducing losses from natural hazards, for example, preparation for risk may sustain and even accelerate economic growth.²⁹

In contrast, when preparation is limited or a shock is unexpectedly large, coping can be haphazard and require costly measures—leaving few resources available for future risk management, worsening vulnerability to shocks, and weakening households' ability to undertake new opportunities. For example, the loss of assets that occurs from natural disasters in countries as different as Ethiopia and Honduras—caused by direct damage from a hurricane or

BOX 3 *How does preparation for risk vary across countries?*

Index of risk preparation across countries



People's preparation for risk at the country level includes actions by and contributions from all social and economic groups and institutions, including the state. An index of preparation for risk is charted on the map above. The index, developed for the *World Development Report 2014*, comprises measures of assets and services across four important categories—human capital, physical and financial assets, social support, and state support—that influence preparation for risk. The component indicators for the index include: average years of total schooling for the population aged 15 and over, and the immunization rate for measles (human capital); the proportion of households with less than \$1,000 in net assets, and an index of access to finance (physical and financial assets); the percent of the workforce who contribute to a pension scheme, and the proportion of respondents stating that “in general, people can be trusted” (social support); and the percent of the population with access to improved

sanitation facilities, and an indicator of fiscal space based on gross public debt as a percentage of revenues (state support).^a

This index shows that the extent of people's preparation for risk tends to be correlated with national income across countries, but only to a certain extent. People tend to be the most prepared in high-income countries (particularly in North America and western Europe), and least prepared in low-income countries (especially in Africa), on average. However, substantial variation exists within regions. For example, Chile is reasonably well prepared for risk, while its neighbor to the east, Argentina, has only average risk preparation despite having a similar level of income per capita. Likewise, Ethiopia has better risk preparation than other countries in the region with similar or relatively higher income per capita. This underscores the importance of policies, over and above income level and access to resources, in determining preparation for risk.

Source: Foa 2013 for the WDR 2014. Map number: IBRD 40097.

a. Each indicator is rescaled to range between zero and one. The index, which is the average of the eight indicators, thus maintains the cardinal properties of the indicators, rather than simply being an average of rankings across the components. This approach follows in part the methodology used in the construction of the Worldwide Governance Indicators (see Kaufmann, Kraay, and Mastruzzi 2010). If necessary, each indicator is transformed so that an increase in its measure represents an improvement.

drought, lack of insurance, and distressed sale of assets—has substantial short-term as well as long-term effects: poor households can effectively become trapped in poverty, making them more vulnerable to future negative shocks and less able to undertake new ventures for improvement.³⁰ Similarly, while the coping responses by governments around the

world in the midst of the 2008–09 crisis—including bailouts of large financial firms, fiscal stimulus, and extended periods of monetary easing—helped calm markets in the short-run, these responses may have negative longer-term effects, including substantially increased public debt and perverse incentives for financial institutions' risk taking.

Beyond the ideal: The obstacles to risk management

If risk management can save lives, avert economic damages, and unleash opportunity—and, furthermore, if risk management is cost-effective and its fundamentals are well understood—then, why aren't people and societies better at managing risk? Although the specific answer varies from case to case, it is always related to the obstacles and constraints facing individuals and societies, including lack of resources and information, cognitive and behavioral failures, missing markets and public goods, and social and economic externalities. This realization leads to an important message. Identifying risks is not enough: the obstacles to risk management must also be identified, prioritized, and addressed through private and public action (box 4).

Consider the case of Mumbai. Its drainage system is more than 100 years old and barely capable of handling the annual monsoon rains. Reports and proposals have repeatedly spelled out how investments, such as installing pumping stations and clearing out debris, are needed to expand the capacity of the storm drainage system. Yet with few exceptions, the proposals have not been acted upon. An exceptionally large monsoon hit the city in 2005, leading to more than 400 deaths, extensive damage to buildings and infrastructure, and interruption of economic and financial activity. Afterward, a fact-finding committee made recommendations for overhauling the drainage system that were distressingly similar to those made in the 1990s. As of 2013, however, implementation is again lagging. As a result, India's financial capital remains highly vulnerable to monsoon rains.

Why aren't people better at managing their own risk?

Lack of resources. Even when a risk management strategy is cost-effective, individuals and groups may find it difficult to undertake because of large upfront costs and limited access to credit. Shortages of assets and finance, which are especially acute in poor and developing countries, can make the trade-offs inherent in risk management harder to handle. Governments may decide that, given their limited budget, current consumption spending is more pressing than investments for disaster risk reduction.

Lack of information and cognitive failures. Relevant information may not exist or be available to decision makers, or they may lack the ability to understand

this information. Cognitive shortcomings are relevant and pervasive obstacles to risk management in many circumstances, even in advanced countries. In the United States, for example, a survey revealed that only 31 percent of homeowners in flood-prone areas were aware of the risk.³¹ The repercussions of extreme instances of lack of information and knowledge—so-called “deep” uncertainty—are explored below.

Behavioral failures. Even if information exists, decision makers may be unable to turn knowledge into actions and behaviors that prepare them for risk. In many cases, decision and policy makers seem to have short memories regarding the origins of crises of various sorts. Systemic financial crises, for instance, are almost always preceded by unusually high credit concentration and growth, and this process seems to be well understood.³² Yet policy makers often do little to control credit booms. A false sense of security may underlie people's inability to manage preparation for risk in normal times (by saving for a rainy day or completing disaster preparedness plans, for instance). And a “paradox of protection” can arise: risk protection that suppresses losses for a long period creates a false sense of security, leading to decreased vigilance and risk awareness and potentially resulting in larger future losses.³³ In many cases what might be perceived as irrational behavior may in fact be the result of distorted incentives, incorrect or insufficient knowledge, or particular social norms and cultural beliefs.

Obstacles beyond the control of individuals hamper their risk management

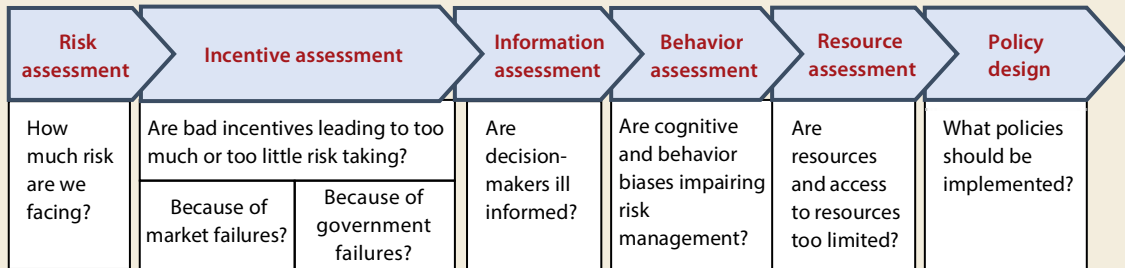
Missing markets and public goods. Markets in areas critical for effective risk management—credit, insurance, jobs—are weak or even missing in many developing countries. So are public goods and services essential for risk management—economic and political stability, law and order, and basic infrastructure. In fact, well-developed markets may be missing because supportive public goods are flawed. If, for instance, the justice system does not enforce contracts, it makes little sense to buy health, vehicular, or house insurance, and no such market will exist.³⁴ There are many reasons why public goods are missing, but this discussion considers only the most pertinent ones for risk management. The first, already discussed, is lack of resources: the costly flood protections constructed in the Netherlands, for example, are simply not feasible for many similarly threatened developing countries, like Bangladesh or Vietnam. The second reason

BOX 4 *Bringing the essentials of and obstacles to risk management together in policy design*

Designing effective public policy must go beyond simply identifying potential risks to analyzing obstacles to risk management. Diagram a below presents a set of screens to assist in decision making—helping to identify critical gaps and revealing effective, low-cost interventions.

ing—helping to identify critical gaps and revealing effective, low-cost interventions.

a. A set of screens to aid risk management



This practical approach provides two important insights for the design of risk management policies:

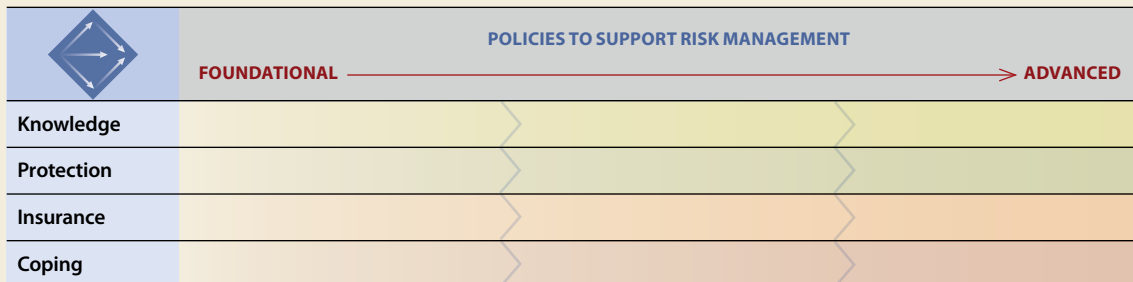
Be realistic. Simple risk management instruments should be preferred when capacity is low. Policy makers should concentrate on low-hanging fruit and win-win solutions. Soft measures that change incentives (such as improving zoning regulations for coastal areas) are preferable as a starting point to engineered measures (such as dikes to prevent flooding). Furthermore, it is particularly cost-effective to strengthen the capabilities that are useful in managing risks of different natures, such as the ability to complete large-scale evacuations (which can be useful for either a hurricane or a nuclear accident, for example). Realistic policy options should ensure that risk management avoids unintended negative policy consequences; provides the right incentives to build on everybody’s best capacities; and protects the most vulnerable, who are often least able to implement ideal but expensive solutions.

Build a strong foundation for improved risk management over time. It often makes sense to create institutional arrangements when the need for them is obvious, such as after a disaster event, and that cannot be easily reversed once the memory of the event has disappeared. This institutional irreversibility should be combined with flexible implementation and continuous learning. Policy makers

should aim for robust policies that may not be optimal in the most likely future, but that lead to acceptable outcomes in a large range of scenarios and that are easy to revise as new information becomes available. Starting with a strong foundation for risk management requires a long-term perspective, creates the right incentives, and minimizes the risk of unintended negative effects. It also helps ensure that policies are flexible enough to be adjusted when new information becomes available. (For more on both these insights, see the discussion entitled “Five principles of public action for better risk management” at the end of this overview.)

Thinking about both the fundamental components of and obstacles to risk management with these lessons in mind can help identify which specific policies are most relevant in different contexts. For example, countries with limited resources or weak institutional capacity should focus on policies that are foundational, while countries that already have solid foundations for risk management in place can aim for more advanced policies. This framework is used throughout the *World Development Report 2014* to organize and prioritize risk management policies across the four main components of risk management (knowledge, protection, insurance, and coping) for different social and economic systems, from the household to the international community. These are summarized in corresponding tables for each of these systems (diagram b).

b. A framework for public policy priorities



Source: WDR 2014 team.

is related to the political economy of risk management. Governments may be reluctant to spend on risk preparation because its costs are immediate and observable while its benefits, even if substantial, are longer term and less visible.

Government failures. Risk management can also be impaired by government failures stemming from capture by interest groups, corruption of government officials, and distortionary policies. On policy capture, enterprises and people who are negatively affected by certain risk management measures will naturally tend to oppose them and be vocal about it, while the people protected by these measures are often not aware of them (and therefore do not support them), or lack the commensurate influence of active lobbies. Powerful tobacco and asbestos lobbies, for instance, can block useful health regulations even in the presence of well-established scientific evidence. On distortionary policies, sometimes even well-intentioned measures can impair risk management by distorting people's incentives to manage their own risk. An example is poorly designed post-disaster support that creates moral hazard and discourages risk management by individuals and firms. Similarly, overly generous safety nets or financial sector bailouts can undermine incentives for risk preparation.

Social and economic externalities. Risk management actions undertaken by some people or countries may impose losses on others. For instance, overuse of antibiotics is creating ever more drug-resistant bacteria. Similarly, excessive exploitation of common natural resources such as oceans, forests, and the atmosphere—a phenomenon known in the literature as “the tragedy of the commons”—is leading to environmental degradation, climate change, and a future drop in economic growth.³⁵ In a different realm, an expansion in the money supply to stimulate the domestic economy in large advanced economies is creating destabilizing capital inflows to developing countries, as well as eroding the wealth of domestic savers and taxpayers. Similarly, instituting trade barriers to protect domestic producers during economic downturns imposes increased cost on trade partners and can lead to trade retaliation, possibly turning a downturn into a protracted world recession.³⁶ Other risk management actions can generate benefits for people other than those bearing their cost, therefore creating incentives to “free ride.” That is the case, for instance, for countries that take costly measures to reduce greenhouse emissions, which can benefit the

rest of the world. Both negative and positive externalities may complicate the process of risk management, making it less predictable and distorting its incentives. The solution is coordination and collective action, which can be difficult to obtain when there are wide differences in preferences, values, and exposures. For instance, externalities and collective action failures may be why reaching a binding international agreement on greenhouse gas emissions is proving so elusive.

Deep uncertainty and robust solutions

“Deep uncertainty” is an obstacle to risk management that deserves special attention. Also known as Knightian uncertainty in economic circles,³⁷ deep uncertainty refers to a situation for which even experts cannot agree on appropriate models to understand it, on the potential outcomes and probabilities of its occurrence, and on how much importance should be given to it. Taking a broad perspective, the difference between deep uncertainty and ordinary uncertainty is a matter of degree, fluid, and evolving. Building knowledge helps to reduce the degree of uncertainty. The history of science is full of cases where deep uncertainty gradually became ordinary uncertainty, amenable to management and control. But while this happens, what should be done in the presence of “unknown unknowns”?

Under conditions of deep uncertainty, it is preferable to implement adaptive and robust policies and actions that lead to acceptable outcomes in a large range of scenarios and that can be revised when new information is available and when the context changes.³⁸ For monetary and financial policy, a promising practice is the use of stress testing of banks and other financial institutions using a broad range of situations, including forward-looking crisis scenarios.³⁹ Above all, plans that are designed for the most likely outcomes but that increase the vulnerability to less likely events should be avoided. For instance, dike systems built only for standard rainstorms and tides can actually increase vulnerability by creating a false sense of security and dramatically increasing the damages when a flood does occur.

The way forward: A holistic approach to managing risk

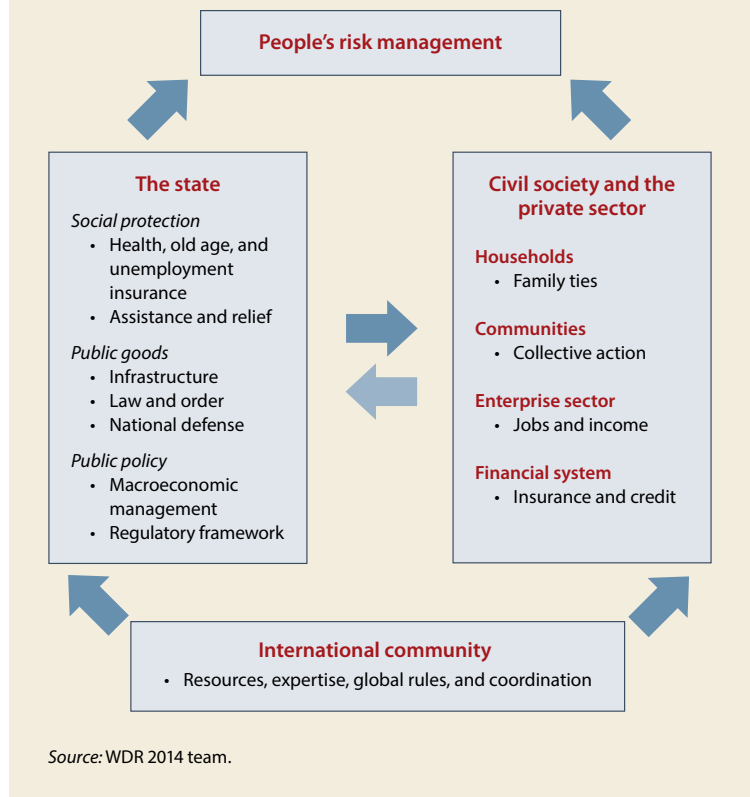
Can individuals on their own overcome the obstacles to risk management they face? Although individuals' own efforts, initiative, and responsibility are essen-

tial for managing risk, their success will be limited without a supportive external environment. While individuals on their own may be capable of dealing with many risks, they are inherently ill-equipped to confront large shocks (such as the head of a household falling ill), systemic shocks (such as a natural hazard or an international financial crisis), or multiple shocks that occur either simultaneously or sequentially (for example, a drought followed by a food price shock and food insecurity).

People can successfully confront risks that are beyond their means by sharing their risk management with others. They can pool their risk collectively through various overlapping social and economic groupings (*systems*). Indeed, the need to manage risk and pursue opportunity collectively may often be a key reason why these groups or systems form in the first place.⁴⁰ These systems extend in size and complexity—from the household to the international community. They have the potential to support people’s risk management in different yet complementary ways (diagram 3). Their different scope may allow them to handle shocks and exposures that match their scale (box 5).

- The *household* is the primary instance of support, pooling resources, protecting its members—especially the vulnerable—and allowing them to invest in their future.
- *Communities* provide informal networks of insurance and protection, helping people deal with idiosyncratic risks and pooling resources to confront common risks.
- *Enterprises* can help absorb shocks and exploit the opportunity side of risk, contributing to more stable employment, growing income, and greater innovation and productivity.
- *The financial system* can facilitate useful risk management tools such as savings, insurance, and credit, while managing its own risks responsibly.
- *The state* has the scale and tools to manage systemic risks at the national and regional levels, to provide an enabling environment for the other systems to function, and to provide direct support to vulnerable people. These roles can be achieved through the provision of social protection (social insurance and assistance), public goods (national defense, infrastructure, law and order), and public policy (sound regulation, economic management).

DIAGRAM 3 Key social and economic systems can contribute to risk management in complementary ways



- *The international community* can offer expertise, facilitate international policy coordination, and pool resources when risks exceed national capacity or cross national and generational boundaries.

These systems have mutual interactions, often complementing and sometimes substituting for each other’s risk management functions. For instance, various mechanisms of protection and insurance provided by communities, enterprises, the financial system, and the state can complement and improve households’ self-protection and self-insurance. Enterprises rely on macroeconomic stability, public services, and financial products to remain dynamic and continue to provide income and employment to people. The financial system can provide tools of insurance, saving, and credit only if enough households and enterprises are able to participate in the system, and if the economy features a certain degree of stability and predictability. Markets, in general, can provide risk management tools and resources at a growing scale if the necessary public services, such

BOX 5 Which systems for which risks?

Individuals face a multitude of risks, and various social and economic systems can help them manage risks that are beyond their means alone. But which systems are most appropriate for which risks? Two important principles provide a way to prioritize risk management across systems:

1. The *principle of subsidiarity* suggests that risks should be handled at the lowest level capable of handling them, to take advantage of the proximity to and greater knowledge of the agents most directly affected by a risk, as well as the ability to monitor both those agents and the risks that they face.
2. The *principle of comparative advantage* suggests that risks should be managed by the system that can handle them most effectively.

Individuals and households are well placed to handle idiosyncratic risks (such as minor injuries or income shortfalls) as long as the potential losses remain relatively small. They have an advantage in managing these types of risk because of their proximity to the level at which the main impact occurs and because of their ability to monitor conditions and efforts within the household.

As the size of potential losses increases, the tools that individuals have at their disposal can quickly be exhausted. The enterprise and financial systems can thus provide effective tools and mechanisms (discussed in more detail in the sections below) for individuals to manage potential losses from large idiosyncratic shocks (such as the

job loss of the head of the household or a burned-down house). The state must sometimes provide substitutes for these functions when markets are missing or not available to some.

Because systemic risks affect large groups of people, they can hardly be managed by individuals alone. Communities have an advantage in managing small systemic risks (such as local violence or flooding) because of their proximity to the groups of people affected and their potential advantage in monitoring and resolving local tensions. The state also has an advantage in managing small systemic risks (such as moderate fluctuations in aggregate prices or regional food shortages) because of its capacity to control the national macroeconomy and transfer resources between different parts of a country.

Because many agents within a country are severely affected when large systemic shocks occur, such as economy-wide banking crises or natural disasters, the cross-support they can provide for one another is limited. In other words, it is difficult for the private sector alone to pool and insure for systemic risk. The state thus has a unique role in managing large systemic risks because it has the scale and tools to prepare at the national and regional levels. Support and coordination from the international community is needed when large systemic risks cross national borders or overwhelm national capacities. Spotlights in the WDR 2014 feature case studies of risk management by different support systems.

Types of risk that can be managed by different systems and examples featured in the WDR 2014 spotlights

	Small idiosyncratic risk	Large idiosyncratic risk	Small systemic risk	Large systemic risk
System best placed to manage risk	Individuals and households	The enterprise sector and financial system	The community and the state	The state and the international community
Spotlight examples	Health risks (Turkey and the Kyrgyz Republic) Loss of employment and income (India)		Food shortages (Ethiopia and El Salvador) Urban violence (Brazil and South Africa)	Natural hazards (the Philippines and Colombia) Financial crises (the Czech Republic, Peru, and Kenya) Pandemics (global)

Source: WDR 2014 team.

as the rule of law and a sound regulatory framework, are in place and effective. The international community relies in part on responsible governments that are willing to cooperate to address global risks; in turn, the international community can help governments and countries that lack resources and capacity for risk management.

The relative importance of these systems changes with the level of development. In less advanced countries, and especially in fragile and conflict-affected countries, informal mechanisms tend to be

more prevalent and the relative roles of the household and the community are larger. For these countries, the international community may also play a larger role through financial assistance and capacity building. As countries advance—and informal mechanisms give way to formal ones—the relative importance of the contributions from the enterprise sector and the financial system grow. The *potential* role of the state is larger in less developed countries, but in these cases the state tends to suffer from more severe capacity and resource constraints. These limi-

tations call for a mutual, symbiotic relationship between the state, civil society, the private sector, and the international community, as countries develop (see below).

The state, civil society, and the private sector: Helping one another manage risk

None of the social and economic systems presented above works perfectly. Indeed, in certain cases they hinder rather than help people's risk management. They have the potential, however, to become effective support systems when their weaknesses are resolved. The state thus has an important potential role to play by complementing and supporting the functions that households, communities, enterprises, and the financial system may serve. From this perspective, the state's role goes beyond the narrow purpose of correcting market failures and extends to addressing systemic risks, building institutions that enhance each component of risk management, and providing direct support to vulnerable populations.

It would be naïve, however, to ignore the fact that the state often falls short in fulfilling its potential role. Historically and throughout the world, examples of government failures are regrettably abundant.⁴¹ This is all too vividly evident in the case of fragile and conflict-affected countries. What to do then? Civil society, the private sector, and the international community can provide badly needed public goods and services—albeit imperfectly. Especially, but not only, in democratic societies, they can also help improve governance and the delivery of public services by generating mechanisms to make the state responsive to the needs of the population and accountable for its actions.⁴²

The discussion that follows assesses the potential contribution of each major system and suggests ways to improve their performance, individually and in combination with other systems. The state's potential contribution is presented in connection with each system, reflecting its overarching role and allowing for an elaboration of specific recommendations for public policy, as well as a discussion of their rationale and trade-offs.

The household

How can it foster resilience and prosperity?

For most people, the household—defined as a group of individuals related to one another by family ties—constitutes the main source of material and emo-

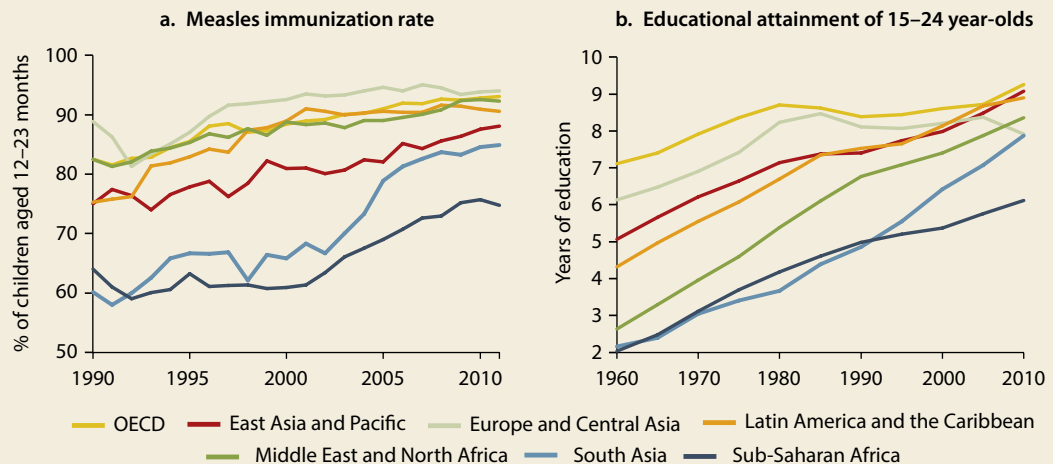
tional support to confront risk and pursue opportunity. Extending Gary Becker's metaphor in *A Treatise on the Family*, households are “little factories” where goods and services of knowledge, protection, and insurance are produced, using both “intermediate inputs” obtained from the rest of society and the pooled efforts and skills provided by family members.⁴³ How can the household contribute?

Protection and risk pooling for its members. Protection and insurance at the household level are particularly important for idiosyncratic risks and even more relevant when market or social insurance is lacking. Protection against adverse shocks is especially important for the vulnerable within the household: the young, the old, and the ill. For this purpose, families can benefit from the resources that are available in society—all the more so if these resources are increasing and improving. Thus, for instance, higher incomes and better access to health services have increased immunization rates for measles to more than 70 percent in every region of the world, although Sub-Saharan Africa still has much room for improvement (figure 3a).

Moreover, sharing bad times (and good times) occurs naturally in the household. Indeed, pooling risk within and across family generations has been a basic form of insurance from time immemorial. The extended family plays an active role, especially in developing countries. For instance, evidence from Bangladesh, Ethiopia, India, Mali, and Mexico shows that extended family members step in to help out in a substantial way when their relatives fall ill.⁴⁴ Similarly, evidence from several countries around the world indicates that family members who migrate assist their families through remittances when negative shocks occur in their place of origin.⁴⁵

Allowing its members, especially the young ones, to make investments for the future. The role of households extends well beyond protecting and insuring members against negative events. Households invest in the human capital and social skills of their members, especially the young, preparing future generations to manage the risks and opportunities they will face. Schooling is one important example where progress has occurred in recent decades. The average number of years of educational attainment has increased since 1960 in all regions—most substantially in regions that initially had the lowest attainment (figure 3b). However, the quality of education, as measured by international exams in science, math, and reading skills, is still lagging behind in many

FIGURE 3 Education and health outcomes in developing countries are improving, but unevenly



Source: WDR 2014 team based on data from World Bank World Development Indicators (database) (panel a) and Barro and Lee 2010 (panel b).

Note: Organisation for Economic Co-operation and Development (OECD) countries in the figure are high-income countries that have been members of the OECD for at least 40 years. All other countries are grouped into geographic regions.

low- and middle-income countries, without signs of converging yet.⁴⁶

What characteristics improve the household's contribution to risk management?

Households are small but complex units. The motivations of their members can range from altruism to self-interest, the intrahousehold relationships can be based on common goals or relative bargaining power, and the household's connections to society can be fluid or remote. These characteristics can have great influence on how well the household functions as a first line of support to confront risk and opportunity.

Access and participation. Communities, labor and financial markets, and public institutions provide the “intermediate inputs” that families build upon to manage their risks. Continuous access to and participation in those markets and institutions is critical for families to be successful risk managers (so much so in the view of the *World Development Report 2014* that the following four sections are devoted to assessing how they can contribute). To give just one example: evidence from 59 countries suggests that access to programs that limit out-of-pocket health expenditures, such as social insurance and private

health insurance, significantly reduces the incidence of catastrophic medical expenditures, especially for poor households.⁴⁷ Given the fundamental importance of health for everything else people do, there is indeed great need for health insurance and much room for improvement: only 17 percent of adults in developing countries report having contributed to health insurance, and this share is as low as 2 percent in some low-income countries.⁴⁸

Fairness within the household. One would like to think of households as nurturing, cohesive units. All too often, however, abuse and discrimination occur within the family, making it a source of, rather than a solution to, risk. Compelling evidence shows that women's economic and social empowerment can strongly influence whether the allocation of resources within the household benefits children and promotes gender equality.⁴⁹ An evaluation of a cash transfer program in South Africa, for instance, found that pensions received by women improved the health and nutritional status of girls but that transfers received by men had no effect on either boys or girls.⁵⁰ One important ingredient for women's economic empowerment is access to the labor market, which in several contexts is limited by inadequate child care infrastructure and restrictive social norms.

Some countries and regions have much room for improvement: female labor participation rates are only 20–30 percent in the Middle East, North Africa, and South Asia, while in most of the rest of the world they are well above 50 percent.⁵¹

How can the state contribute?

The state has an important role to play in providing social services and countering harmful social norms. Policies that *empower households as a unit* and policies that *empower individuals within households* are necessary.

Providing essential social services. Access to good, even if basic, educational and medical services can prepare people to confront major health risks, handle life-cycle transitions, and take advantage of work opportunities. In this sense, the drive for “equality of opportunities” can also bring about resilience for households and individuals.⁵² The efforts of Thailand and Turkey to offer universal access to quality health insurance deserve special mention. Universal access to health care is likely to require a partnership between the public and private sectors to ensure both fiscal sustainability and sufficient human resources.⁵³ For the most vulnerable, targeted safety nets can have a dramatic impact in preventing the coping responses that incur long-term costs—such as reducing basic consumption, withdrawing children from school, selling productive assets in distress sales, or resorting to crime. Ethiopia’s Productive Safety Net Program is one successful example of protecting the most vulnerable from food insecurity while building community assets to better manage climatic risks and raise productivity.⁵⁴

Increasing women’s power in the household. This can be done first through economic empowerment: encouraging women’s participation in the labor force and, for poor households, directly increasing their purchasing power. An example of the latter is conditional cash transfer programs that make payments to women directly; impact evaluations have shown that these programs improve family and, especially, children’s outcomes, including health and cognitive development.⁵⁵ A second route is through social and legal empowerment: enforcing legal measures against abuse and domestic violence, eliminating regulations that discriminate against women in asset ownership or economic activity, and conducting educational campaigns to counter social norms that

tolerate violence or discrimination against women and children. The campaigns should target both men and women: more than 20 percent of women in all regions, except Latin America and the Caribbean, believe a husband is justified in hitting or beating his wife for reasons like going out without telling him and arguing with him.⁵⁶

The community

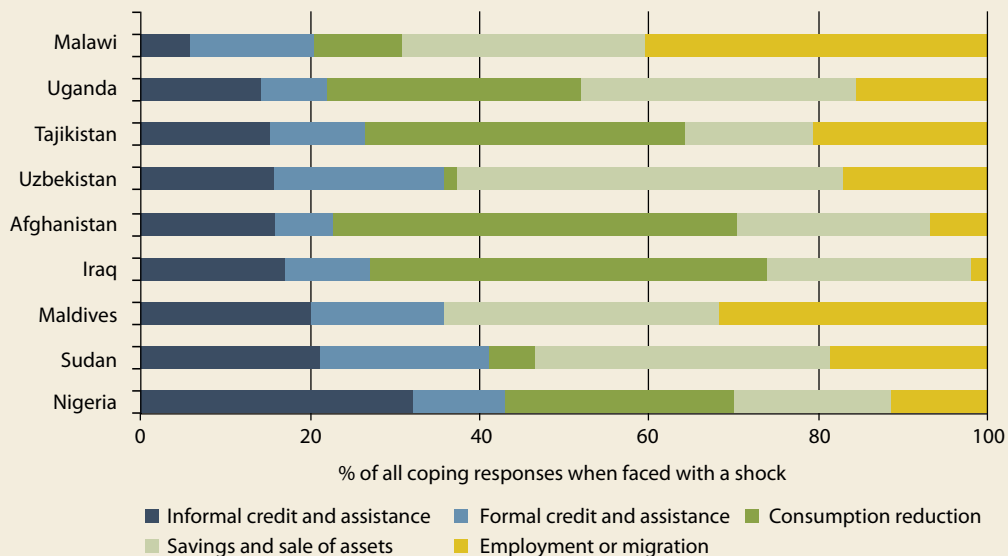
How can the community foster resilience and prosperity?

Communities are groups of people who interact frequently and share location or identity. Neighborhood groups, religious groups, and kinship groups are some examples. They work through informal networks based on trust, reciprocity, and social norms—what James Coleman and Robert Putnam call “social capital.”⁵⁷ In this way, communities can help their members by sharing idiosyncratic risks and confronting common risks and opportunities.

Sharing idiosyncratic risks. Informal insurance is particularly important for low-income households and is sometimes their only real safety net. In the village of Nyakatoke in Tanzania, for instance, with a population of only 120 families, there are about 40 different insurance schemes (burial societies, rotating savings associations, and arrangements to share labor and livestock).⁵⁸ These practices are also relevant at the country level. Indonesian households, for instance, have informal insurance against 38 percent of the economic costs of serious health shocks and 71 percent of the costs of minor illness.⁵⁹ In Nigeria, informal credit and assistance make up 32 percent of all coping responses identified by households (figure 4).

Confronting common risks and opportunities. When communities channel their social capital for collective action, they can provide some public goods (such as basic transport and irrigation infrastructure) to protect against common adverse events (such as epidemics, natural hazards, and crime and violence) and to facilitate taking advantage of common opportunities (such as new markets and technologies).⁶⁰ This collective action can be especially important when state capacity is low. The informal settlement of Orangi in Karachi, Pakistan, for example, financed and organized its own sanitation, vaccination, microfinance, family planning, and violence prevention, assisted by a local nongovernmental organization.

FIGURE 4 *People respond to shocks on their own and by pooling risk with others*



Source: WDR 2014 team based on data from household surveys, various years 2004–11.

What characteristics improve the community’s contribution to risk management?

Cohesiveness. Communities with strong ties between their members—that is, those communities endowed with high “bonding” social capital—are better able to organize collective action on behalf of the group.⁶¹ In fact, for local problems whose solution eludes markets and governments, a cohesive community can be the missing piece of the puzzle. Cohesiveness is not easy to achieve, however, when community members have different values and cultural identities, as is increasingly the case in urban communities. Moreover, community cohesiveness is seriously compromised when people are excluded or discriminated against.

Connectedness. Communities also need connections to other communities and to markets; without these connections they remain small and insular, lack political influence, and are unable to accomplish anything at scale. Communities with strong ties to one another—that is, those communities that have high “bridging” social capital—are more likely to collaborate with one another on mutually beneficial risk management projects and to coexist peacefully. Cities with high religious or ethnically motivated violence, for example, tend to lack routine interaction among members of different groups and to be characterized by divisive local leaders, media, and criminal gangs.

How can the state contribute?

Reliance on personal interactions and informal means of enforcement underlies the strength of communities, but it is also the source of their weakness. Communities struggle with systemic risk and falter when risk management requires complex and long-term preparation. Governments can help by providing essential public goods and promoting inclusion and respect for diversity.

Providing essential public goods, such as infrastructure and rule of law. Communities’ autonomous coping and insurance mechanisms do not add up to adequate risk management; they also need national and local governments to complement their efforts. For example, neighborhoods are potentially able to maintain their own drains, but urban flood prevention requires citywide drainage and land use planning that only city governments can provide. Similarly, neighborhoods can patrol against petty criminals, but they are powerless against organized crime.

Promoting inclusion and respect for diversity. Communities are not necessarily fair or reliable and can be marked by strong inequalities in power and wealth.⁶² They may exclude vulnerable people (chronically ill, widowed), new entrants (migrants, refugees), or those who happen to be different (ethnic minorities). The state can help by enacting antidiscrimina-

tion laws, conducting educational campaigns, and encouraging interactions that promote cohesiveness in the face of diversity.

Not only can governments support communities, but community participation can increase the quality of the governance process and improve the performance of government programs. People may not heed the call to evacuate when government sounds the disaster alarm, but they will run when warned by a trusted fellow community member. Mobilizing communities' voice, energy, and collective action can help overcome some of the obstacles to improving risk management in countries and regions with weak government capacity. For example, Afghanistan's National Solidarity Program is constructing rural infrastructure with community participation and also laying a foundation for improved local governance. In India and Uganda, disseminating information on health and education entitlements and outcomes through community-sponsored public meetings has improved both government services and community participation, leading to more vaccinations, more prenatal supplements, and fewer excess school fees.⁶³

The enterprise sector

How can the enterprise sector foster resilience and prosperity?

The enterprise sector comprises workers and owners, the arrangements that organize their relationships, and the technologies that turn production factors into goods and services. Enterprises, the defining unit of the enterprise sector, range from informal to formal, from self-employment to partnerships to giant multinational corporations, and from agriculture to manufacturing and services. Whereas the owner of a single enterprise might seek to maximize its profits, the enterprise sector as a whole encompasses the interests of workers, owners, and consumers. Despite the possible important trade-offs among these interests, the enterprise sector can help people manage risk through several channels, as described below.

For workers and owners, being part of a multi-person enterprise—that is, a firm—offers the possibility of sharing the benefits and losses from specialization, collaboration, and innovation. Indeed, this is one of the main motives behind the formation of firms. As Frank Knight and Ronald Coase argued in their seminal studies, firms have an institutional advantage in providing cost-efficient ways of dealing with uncertainty and overcoming transaction

costs.⁶⁴ Whereas most individuals on their own are naturally risk averse and thus reluctant to take on new ventures, in groups they become more willing to pursue projects that involve more risk but also promise higher returns. Firms, therefore, can serve as natural vehicles to exploit the upside of risk, with beneficial consequences for individuals' resilience and prosperity.⁶⁵

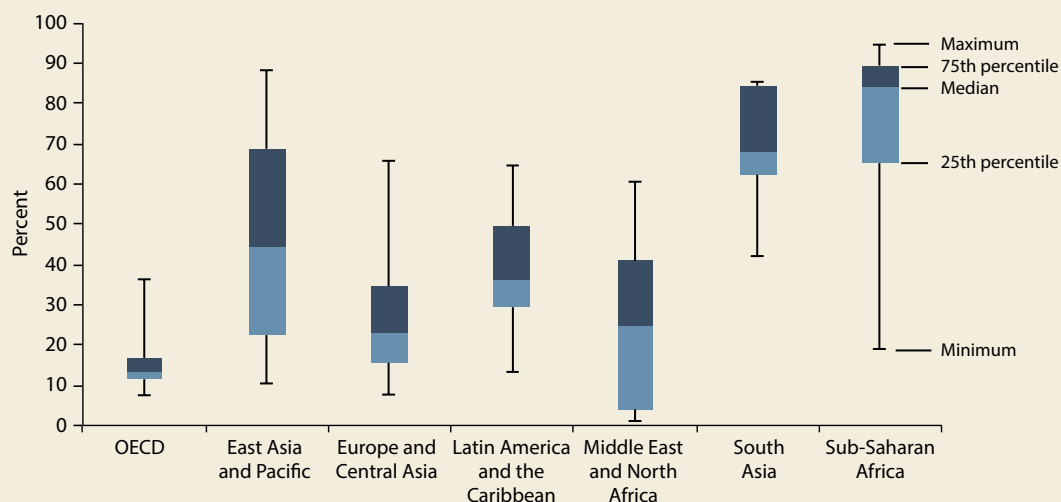
Risk sharing. Enterprises allow risk sharing among workers through collaboration; among owners of firms through investment diversification; and between workers and owners through (formal or informal) contractual arrangements. For risk sharing within a given enterprise, achieving a certain size is an advantage. The enterprise sectors of many developing countries, however, are dominated by self-employment (figure 5). Rates of self-employment are around 70 percent in South Asia and exceed 80 percent in Sub-Saharan Africa and are also pervasive in developing countries in other regions. These high rates of self-employment suggest that the incomes of vast numbers of workers in developing countries are vulnerable to diverse shocks—a sick child, an equipment failure, or a change in the weather could mean the loss of a day's income and more. They also suggest that the enterprise sector is not benefiting from the specialization and increased productivity that multiperson enterprises make possible.

Innovation and resource reallocation. When fueled by competition, the enterprise sector can promote innovation by adopting new technologies and reallocating resources. In some instances, it may require exit and entry of enterprises in the economy. This process of “creative destruction,” as first labeled by Joseph Schumpeter,⁶⁶ can generate substantial adjustment costs but may be the only way an economy remains resilient and prosperous in the face of constantly changing conditions. Improving this dynamic process can have significant effects both on reducing the risk of prolonged recessions and on increasing aggregate productivity. For instance, one estimate finds that making resource allocation as efficient in China and India as it is in the United States would increase total factor productivity by as much as 50 percent in China and 60 percent in India.⁶⁷ These large gains, however, would also require developing institutions and a business environment that can support a high degree of dynamism in the enterprise sector—not an easy task.

Worker, consumer, and environmental protection. Motivated by reputational considerations and properly

FIGURE 5 *Self-employment is more prevalent in developing countries, especially in Sub-Saharan Africa and South Asia*

Self-employment, as percent of total employment, average 2004–06



Source: WDR 2014 team based on data from World Bank World Development Indicators (database).

Note: Organisation for Economic Co-operation and Development (OECD) countries in the figure are high-income countries that have been members of the OECD for at least 40 years. All other countries are grouped into geographic regions.

regulated by the state, the enterprise sector can contribute to people's risk management by providing workplace safety, consumer protection, and environmental safeguards. These protections are not guaranteed, however; and in some cases enterprises do undermine them and generate losses for society. These harmful practices can be corrected with stewardship from the state, communities, and enterprises alike. Given the right incentives, firms that make these social protections a priority can have substantial benefits. A recent meta-analysis, for instance, found that workplace wellness programs reduce medical and absenteeism costs—gains that accrue to both workers and firms.⁶⁸

What characteristics improve the enterprise sector's contribution to risk management?

Two characteristics enhance the ability of the enterprise sector to contribute to people's resilience and prosperity: *flexibility* and, over time, *formality*.

Flexibility. Flexibility is the capacity of the entire enterprise sector (owners, workers, technologies) to adjust to changing conditions. It should not be confused with the simple ease of firing workers. An

enterprise sector that is flexible is more capable of responding to shocks by allocating resources within and across enterprises, promoting risk sharing, and innovating in an ever-changing world. In the recent global financial crisis, for instance, Denmark and Spain were hit hard, yet their labor outcomes were markedly different. In Denmark, job separations were high but unemployment spells were short. In contrast, in Spain the unemployment rate, which stood at 25 percent at the beginning of 2013, has shown few signs of abating since the start of the crisis. The difference is arguably explained by the rigidity within the enterprise sector in Spain, in contrast with Denmark's propitious business environment. This situation has prompted a serious debate and recent reform proposals in Spain to remedy the situation. More generally, the evidence indicates that countries with less flexibility in their enterprise sectors suffer deeper and more prolonged recessions when negative shocks occur.⁶⁹

Formality. For enterprises, formality is defined as compliance with laws and regulations. Whether formality is beneficial (for enterprises and the economy) or not depends on the quality of the norms dictated by the state and the quality of the public

services it offers. When these norms and services are sound, the enterprise sector is characterized by less self-employment and larger, more stable, and more formal firms. These characteristics are all related. Informal mechanisms may be effective for small firms and simple transactions, but they are insufficient for larger firms and complex relations with workers and markets. With adequate public regulations and services, formal firms can benefit from better legal protection (such as contract enforcement) and better use of public infrastructure (such as ports for international trade). That, in turn, can promote risk sharing and innovation among enterprises. Moreover, it can make enterprises more easily accountable for their impact on worker safety and on consumer and environmental well-being.⁷⁰

There are both synergies and trade-offs between flexibility and formality. In countries with effective state institutions, formality enhances flexibility. In countries with weak state institutions and cumbersome regulatory regimes, however, the cost of formality can be too large for the majority of enterprises and workers. In this case, informality is a means for the economy to achieve a certain degree of flexibility and for workers to access a practical safety net.⁷¹ Figure 6 provides a typology of countries based on the flexibility and formality of their product and labor markets.

How can the state contribute?

Public policy for the enterprise sector requires reforms that balance the economy's need for flexibility with society's need for legal and regulatory protections.

A better business environment. Several of the ways in which the state can contribute to productivity and innovation can also enhance the resilience derived from the enterprise sector. A better investment climate can improve risk management in the enterprise sector by encouraging adherence to sensible rules and regulations and by increasing the sector's capacity to adjust to new conditions. Most basically, secure property rights and regulatory certainty, along with low costs for firm entry and exit, are essential. In addition, although labor market reforms in isolation are unlikely to be successful, reducing the burden of labor taxes and streamlining regulations is a critical component of a comprehensive set of reforms—where the overall effect is larger than the sum of their parts.⁷² Alongside such complementary reforms, recent cross-country evidence finds that

moving a country from the quintile with the greatest labor rigidity to the one with the least rigidity improves the speed of adjustment to shocks by one-half and increases productivity growth by as much as 1.7 percentage points.⁷³ Furthermore, strong and inclusive social insurance is necessary so that flexibility in the enterprise sector does not come at the expense of the well-being of workers, their households, or their communities (box 6).

Stronger and enforceable regulations for worker, consumer, and environmental safety. While in many areas regulations can be excessive and disruptive of market forces, stronger and enforceable regulations are needed to ensure workplace safety, consumer protection, and environmental preservation. Market failures derived from externalities and asymmetric information are pervasive in these areas, requiring direct intervention by the state. The deadly garment factory collapse in Bangladesh in 2013—which claimed the lives of more than 1,100 workers—is a sad reminder of the importance of the state's monitoring and enforcement of regulations that cannot be overseen by people on their own. These regulations are important, particularly in states whose low institutional capacity requires them to prioritize their interventions carefully.

The financial system

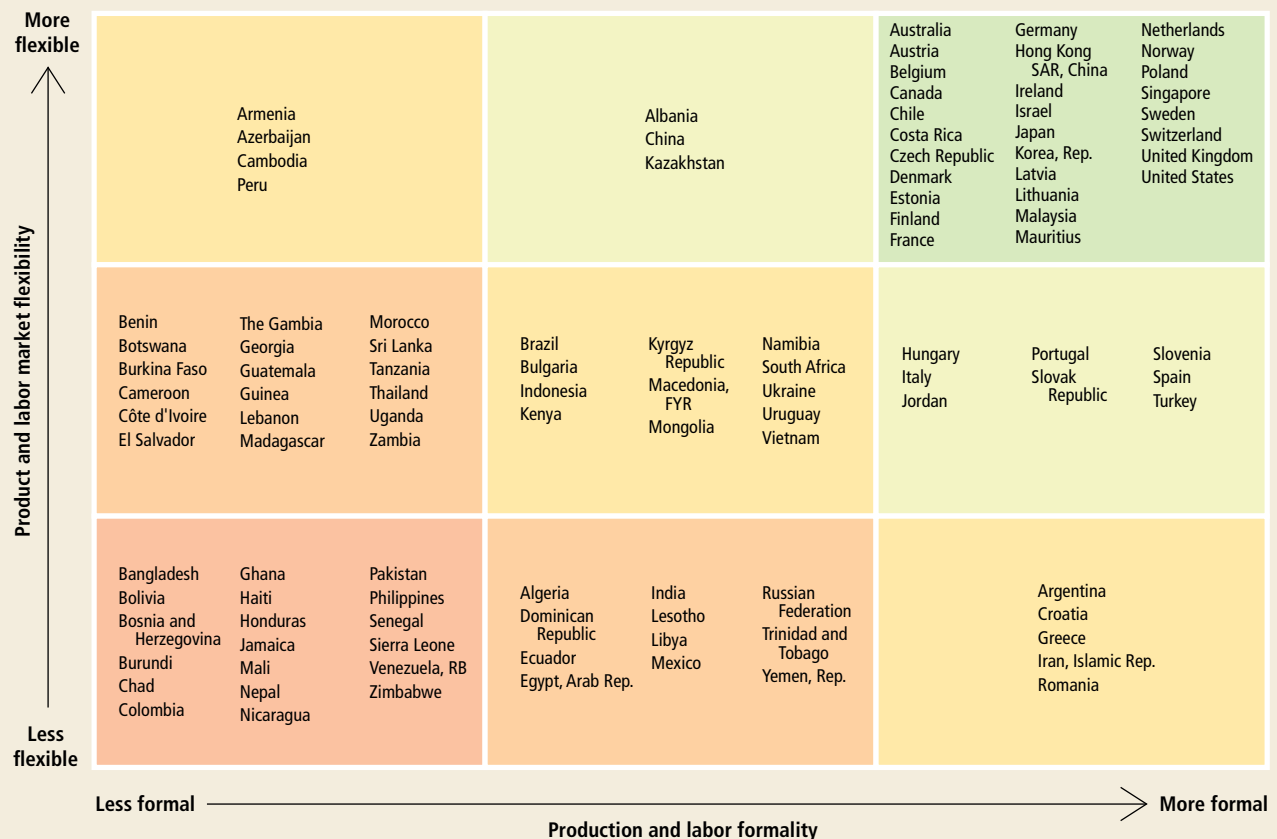
How can the financial system foster resilience and prosperity?

Through the provision of useful financial tools and responsible management of its own risks, the financial system can shield people from the impact of negative shocks and better position them to pursue opportunities. Saving instruments (such as bank deposits and liquid securities) enable people to accumulate buffers for rainy days. Credit instruments (such as education or mortgage loans) alleviate financing constraints, helping people to smooth consumption following negative shocks but also to exploit opportunities with greater flexibility. Finally, market insurance (such as health and residential insurance) provides a means to cover the costs of damaging adverse events.

What characteristics improve the financial system's contribution to risk management?

Inclusion and depth. As Merton Miller and numerous followers have argued persuasively, when finan-

FIGURE 6 Countries vary widely in the flexibility and formality of their product and labor markets



Source: WDR 2014 team based on data from World Bank Pensions (database); World Bank World Development Indicators (database); World Economic Forum 2012; and Schneider, Buehn, and Montenegro 2010.

Note: Economies in the top row are high (above the median value) in both product market flexibility and labor market flexibility; in the middle row they are high in one or the other of the two; and in the bottom row they are low (below the median value) in both flexibility indicators. Similarly, economies in the first column on the left are low in both formal production and formal labor; in the middle column they are high in one of the two formality indicators; and in the last column on the right they are high in both formality indicators. Only economies with data for all four indicators are considered, and median values are calculated within this sample.

cial markets are competitive and function without distortions, they can efficiently provide more and better tools and services to more people.⁷⁴ Indeed, financial markets can provide instruments and services that help people face risks of varying frequency, intensity, and nature, either idiosyncratic or systemic. However, about 70 percent of people in low- and middle-income countries do not use essential financial tools at all, compared with about 40 percent in high-income countries. Data on individuals' financial portfolios show that financial savings and insurance are each used by only about 17 percent of people in low- and middle-income countries (compared with 45 percent of people

using financial savings tools in high-income countries), and credit is used by about 8 percent (compared with 14 percent in high-income countries)—although great heterogeneity exists across countries (figure 7).

Stability. The Achilles' heel of the financial system is its propensity for crisis. As observed in the seminal work of Douglas Diamond and Phillip Dybvig, the mismatch between the duration of banks' assets (long-term) and liabilities (short-term) makes the financial system inherently unstable.⁷⁵ If the financial system fails to manage the risk it retains, it can hurt people—directly by hindering their access to

BOX 6 *Should access to social insurance be tied to work status?*

The provision of *basic* insurance against the risks associated with illness and old age—especially for the vulnerable—is arguably a fundamental goal for public policy. But how is social insurance funded and whom does it benefit? Traditionally, it has been funded through mandatory payroll taxes levied on employers and employees, and it has benefited contributing workers. The problem with this approach is its limited coverage: in most developing countries, formal workers (who contribute and benefit from social insurance) make up less than half the labor force (and much less in Sub-Saharan Africa and South Asia). The traditional approach thus ends up excluding many workers—mostly those who are low-income, self-employed, or work in agriculture.^a

To close the coverage gap, several countries have set up noncontributory systems for health and old-age pension insurance. Is it a good idea to combine noncontributory and mandated contributory systems? If the benefits from contributing to social insurance are uncertain and the enforcement of mandated payments is weak, having these parallel systems may undermine the incentives for employers to hire formally and for employees to seek formal employment. A vicious circle could then ensue: informality breeds low coverage, and the response to low coverage breeds further informality.^b

One possibility that merits discussion is delinking social insurance from work status. This uncoupling would involve the following public action:

- Allowing people to participate in health and old-age insurance regardless of work status (employed or unemployed, and formal or informal), requiring reasonably short vesting periods and portable benefits.
- Making additional contributions to health and pension schemes voluntary and clearly linked to predictable benefits that are beyond the basic provisions granted by the state. Involving the private sector in the management and provision of the voluntary portion of social insurance contributions and benefits.
- Providing basic health care and old-age pensions funded by the state and directed to vulnerable populations but potentially open to everyone (at least for health care).^c
- Funding this basic provision through general government revenues and user fees (for health care), to a level consistent with fiscal sustainability.
- Clearly communicating with the public the characteristics and limitations of basic provisions and the additional costs and benefits of voluntary contributions.
- Promoting financial literacy and fostering trust in the financial system regarding its insurance function by macroprudential actions and policy certainty.

Too ambitious or far-reaching? Maybe so—but worth discussing.

Source: WDR 2014 team.

a. Ribe, Robalino, and Walker 2012.

b. Evidence from Chile, Colombia, and Mexico shows that the interplay of contributory and noncontributory systems has led to declines in formal employment, and there is widespread evidence that smaller, informal firms tend to be less productive and pay lower wages. See Levy and Schady 2013; Pagés-Serra 2010; ILO 2009; La Porta and Shleifer 2008.

c. Developing countries such as Mauritius and South Africa already rely primarily on noncontributory systems for pensions, while several other countries—including China, India, Thailand, Turkey, and Vietnam—have also begun to offer universal access to health insurance. See Holzmann, Robalino, and Takayama 2009.

finance, or indirectly by hampering available credit for enterprises and straining public finances, thereby contributing to loss of jobs, income, and wealth. The experience from 147 banking crises that struck 116 countries from 1970 to 2011 (map 1) is telling: the average cumulative loss of output during the first three years of crises was 33 percent of GDP in advanced economies and 26 percent in emerging markets.⁷⁶

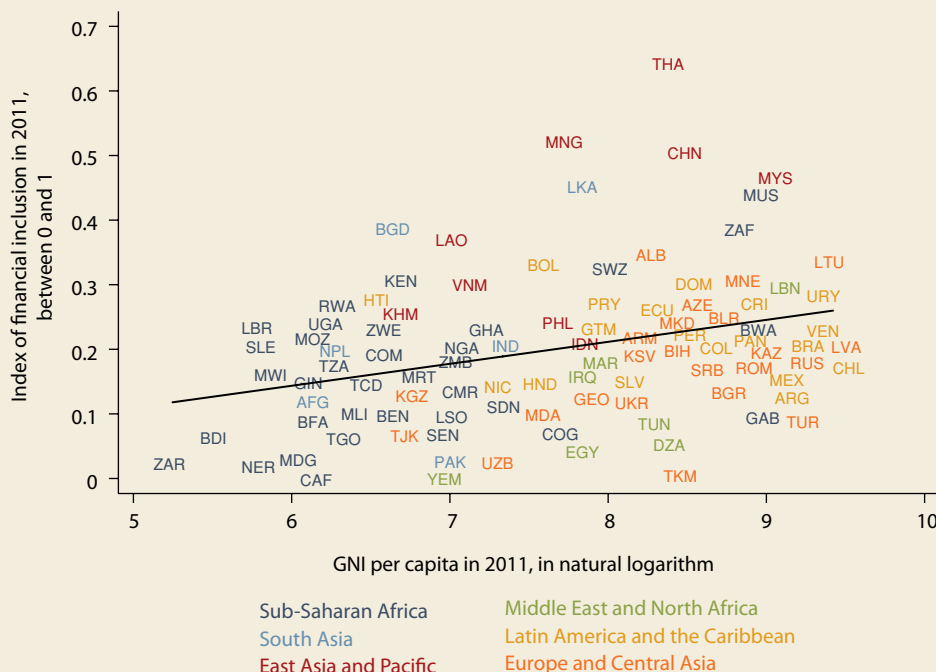
Both synergies and trade-offs may exist between financial inclusion, depth, and stability. By making greater and more diversified domestic savings available to banks (and thereby reducing reliance on reversible foreign capital), greater financial inclusion and depth can enhance the stability of the financial system.⁷⁷ But excessive financial inclusion and rapid deepening can endanger stability. This applies especially to credit markets. For instance, the banking crises in Thailand (1997), Colombia (1982), and Ukraine (2008) were preceded by excessive an-

nual credit growth of 25 percent, 40 percent, and 70 percent, respectively. Providing the right amount of credit—not too much and not too little—is a major concern for all countries.

How can the state contribute?

Providing sound financial infrastructure. Financial infrastructure consists of institutions that facilitate financial intermediation, including payment systems, credit information bureaus, and collateral registries. Financial infrastructure also includes a regulatory framework that fosters both consumer protection and competition among financial institutions. Mexico and South Africa, for instance, have enacted efficient consumer protection frameworks, which include ombudsmen to resolve disputes in consumer finance.⁷⁸ Competition can lead to innovation in financial inclusion, as in the Philippines, which has

FIGURE 7 Financial inclusion in savings, credit, and insurance across developing countries at different income levels



Source: WDR 2014 team based on data from World Bank Global Findex (database) and World Bank World Development Indicators (database).

Note: The index of financial inclusion is calculated based on Global Findex data on the use of savings (percentage of adults who saved money at a financial institution in the past year); credit (percentage of adults who borrowed from a financial institution in the past year); and insurance (percentage of adults who personally paid for health insurance, and percentage of adults working in agriculture who purchased agriculture insurance). GNI = gross national income.

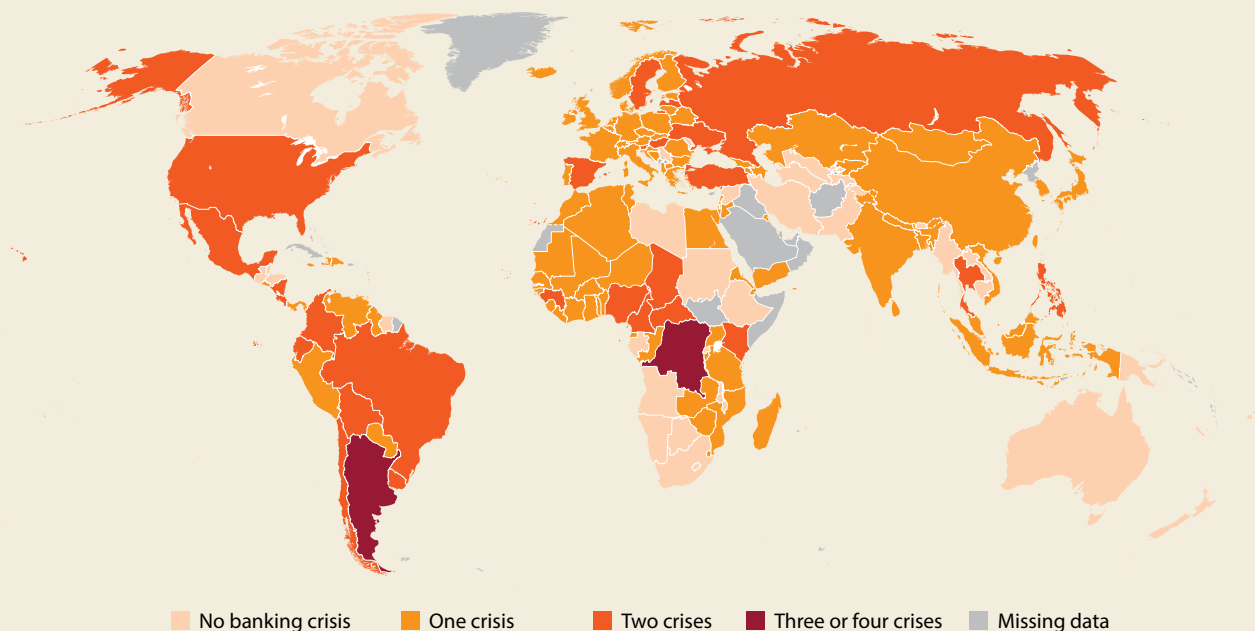
allowed mobile network operators to take on many banking operations.⁷⁹ Moreover, to promote financial inclusion, the government can lead by example through innovative practices. An interesting case is India’s National Rural Employment Guarantee Act, which has improved outreach to poor people living in rural areas through the introduction of government-to-person payments using a bank account.⁸⁰

Enacting macroprudential regulation for systemic risks. To better manage the potential for systemic financial crises, countries should establish strong macroprudential regulatory frameworks—frameworks that consider the interconnectedness of financial institutions and markets and that address the financial system as a whole.⁸¹ Making macroprudential regulators independent, possibly by placing them under the central bank, is the first step in this direction—as in the Czech Republic, which in 2006 gave the central bank explicit responsibility for fostering financial stability. Governments can then pursue proactive macro-

prudential supervision and intervene with timely and robust policy tools, as the Republic of Korea did in 2011 in the wake of the international financial crisis by imposing a levy on bank noncore financial liabilities to manage speculative capital flows.

Ideally, macroprudential regulation would prevent financial crises. Some crises, however, are unavoidable, and a crisis resolution system is necessary. How should losses be handled? In resolving crises, countries should seek to pass bank losses to existing shareholders, managers, and in some cases uninsured creditors—minimizing costs to taxpayers, threats to fiscal stability, and future moral hazard. To facilitate recovery from crises, governments and the international community can contribute by reducing regulatory uncertainty through timely decisions and effective global coordination.

Taking the trade-offs and synergies between inclusion, depth, and stability explicitly into account. Evidence suggests that in 90 percent of cases, national financial

MAP 1 *Banking crises around the world, 1970–2011*

Source: WDR 2014 team based on data from Laeven and Valencia 2012. Map number: IBRD 40098.

sector strategies do not address specific trade-offs between financial development goals and the management of systemic risk, although more than two-thirds of countries commit to achieving both goals within their strategy.⁸² A financial policy committee may provide a means for a country to better take trade-offs and synergies in the financial sector into account and improve policy coordination. An interesting example to consider is Malaysia, where the central bank takes the lead in engaging major stakeholders in financial sector policy, including the ministry of finance and private sector experts. The goal of this engagement is to prepare a national financial sector strategy for Malaysia that takes into account trade-offs between promoting financial inclusion and development and managing systemic risk in the financial sector.

The macroeconomy

How can the macroeconomy foster resilience and prosperity?

The macroeconomy is the platform where all economic activity takes place: from consumption to savings in households, from investment to production in enterprises, and from borrowing to lending

in financial markets. Sound macroeconomic management can provide an environment where households, communities, and enterprises are able to plan for the long term and undertake their own risk management. Furthermore, macroeconomic policy can address large systemic risks, which households and other socioeconomic systems are unequipped to handle on their own. As Robert Barro, among others, has noted, macroeconomic crises with large welfare costs have marked the world economy for decades—palpably so since 2007.⁸³ Policy makers have an essential role to play in preventing these crises or at least in mitigating their effects.

Macroeconomic stability. Business cycles are intrinsic to modern economies, and some degree of volatility in aggregate prices, output, and employment is normal. Evidence indicates that the harmful effects of volatility do not derive from moderate fluctuations but from high inflation and abrupt moves in economic activity. These effects percolate throughout the economy—reducing employment, interrupting credit, and deferring investment—and produce losses that lead to a decline in long-term economic growth. Indeed, analysis across a set of developed and developing countries over four decades suggests that an increase in GDP volatility

from normal to crisis-related levels can decrease long-run per capita GDP growth by around 2 percentage points a year.⁸⁴

Continuous provision of public goods and services. Part of the reason why crises have an impact on long-run growth is that they can result in an interruption or deterioration in the provision of essential public goods and services. These interruptions occur especially when governments are forced to undertake drastic cuts in expenditures during downturns. This was the case, for instance, in several Latin American countries during the 1980s and 1990s, with more than half the fiscal adjustment consisting of spending cuts in infrastructure investment.⁸⁵ Similarly, social security spending dropped in nearly half the countries in the Middle East and North Africa following crises in the region.⁸⁶ During the latest global financial crisis, education budgets fell sharply in the majority of Eastern European countries: for instance, by 25 percent in Serbia and 10 percent in Hungary.⁸⁷

What policies can best contribute to risk management?

Experts have argued that macroeconomic policies should be credible, predictable, transparent, and sustainable. This is sensible advice. It can also be presented more concretely in terms of risk management: macroeconomic policy makers should behave prudently during upswings to avoid costly coping during downturns.

Transparent and credible monetary policy. Endowed with independence and a drive for transparency and credibility, monetary policy authorities have successfully brought down inflation worldwide in the last 25 years: while 34 countries had annual inflation greater than 50 percent in 1990–94, only 1 country (Zimbabwe) registered that rate by the end of the 2000s. Adopting a monetary policy framework that creates incentives for long-term price stability, while accounting for the business cycle, has been crucial to defeating inflation.

The 2008–09 international financial crisis and the ensuing recession in developed countries have tested the improvements made in monetary policy in developing countries. All in all, they have proven to be resilient. One important issue to consider in the wake of the crisis is whether financial stability should be included as a direct objective of monetary policy. The jury is still out, but it can be argued that financial stability is best achieved through macro-

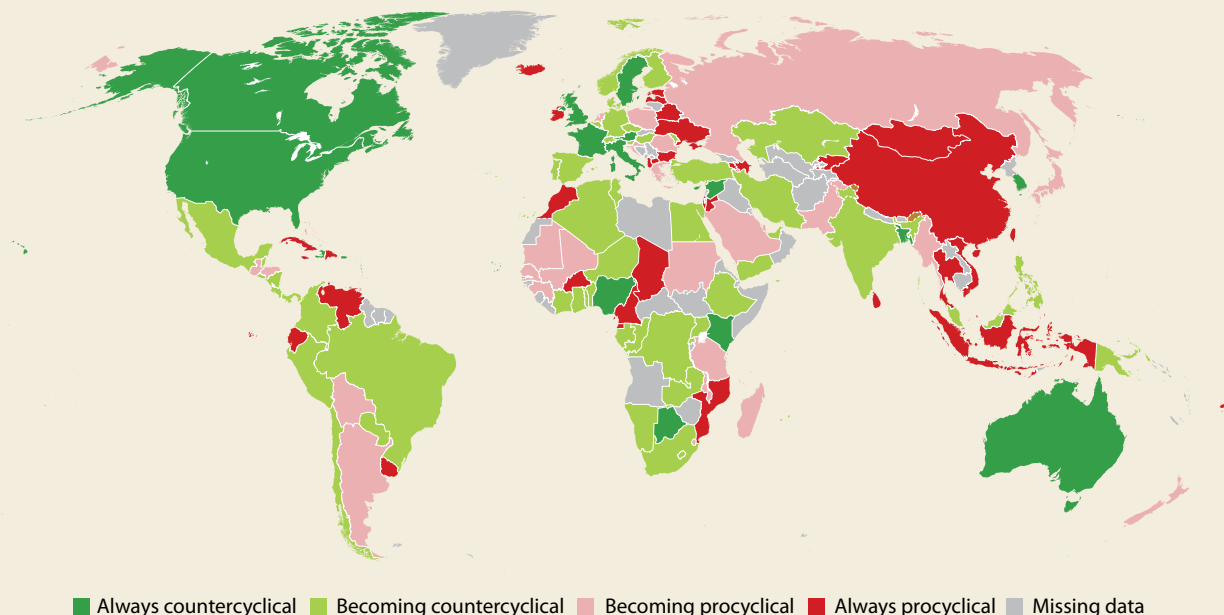
prudential instruments—aimed at curbing financial imbalances and volatile capital flows—rather than through monetary policy.⁸⁸

Flexible exchange rate regimes. Although debated for a long time, flexible exchange rates have proven to be effective shock absorbers. That is true whether the shock originated inside or outside the domestic economy. Countries with flexible exchange rates tend to adjust better—recovering more quickly and more strongly—to deterioration in their terms of trade,⁸⁹ natural hazards such as earthquakes and storms,⁹⁰ and other shocks that may produce internal or external imbalances.⁹¹

Countercyclical and sustainable fiscal policy. Worldwide, fiscal policy has not made as much progress as monetary policy in terms of effective process and positive results. This is not surprising: fiscal policy is inherently more complex—having multiple objectives and instruments and being immersed in the political process. With respect to risk management, fiscal policy in developing countries has suffered from a procyclical bias that has tended to amplify upswings and worsen recessions.⁹² In the past two decades, however, several developing countries around the world have put a premium on fiscal transparency and discipline, building buffers during good times with an eye toward future downturns. These institutional improvements explain the recent ability of a large fraction of developing countries to conduct countercyclical fiscal policy, mainly by turning investment and consumption spending in a direction opposite to that of the cycle in general economic activity (map 2 focuses on countercyclical consumption spending). Independent fiscal councils can provide an important means to further institutionalize such discipline (box 7).

Why is countercyclical fiscal policy useful? First, it allows governments to continue to provide goods and services and to maintain their public investment programs in a stable fashion, even if public revenues drop (as is normal in the downside of the business cycle). Second, it provides resources to increase social assistance and insurance to larger numbers of people in need who are suffering from adverse cyclical macroeconomic conditions. These two mechanisms make a significant contribution not only during the recessionary part of the cycle but also for the long-run welfare of people and the economy.⁹³ A third possible reason is to stimulate the economy. There is little evidence, however, that discretionary fiscal stimulus based on fueling consumption works. To the con-

MAP 2 *Government consumption became countercyclical in more than one-third of developing countries over the past decade*



Source: WDR 2014 team estimations based on Frankel, Végh, and Vuletin 2013 methodology. Map number: IBRD 40099.

Note: The map shows the evolution of the cyclical stance of fiscal policy from 1960–99 to 2000–12. The cyclical stance is measured in a regression of the (Hodrick-Prescott) cyclical component of general government consumption expenditure on its own lagged value, and the cyclical component of real GDP. The sign of the coefficient on the cyclical component of real GDP indicates whether government consumption expenditure is procyclical (positive sign) or countercyclical (negative sign). The coefficient on the cyclical component of real GDP was estimated separately for the periods 1960–99 and 2000–12. Then, countries are classified as always countercyclical (in both periods); becoming countercyclical (only countercyclical in 2000–12); becoming procyclical (only procyclical in 2000–12); and always procyclical (in both periods). The likely endogeneity of the cyclical component of real GDP was controlled for by using as instruments the (current and lagged value of the) cyclical component of real GDP of the country's main trading partners and international oil prices, as well as the lagged value of the country's own cyclical component of real GDP.

trary, estimates of the Keynesian fiscal multiplier—the increase in GDP for every dollar of additional government spending—range only between 0.4 and 0.6 for most developing countries and between 0.6 and 1.2 for most developed countries.⁹⁴ Once the cost of raising the necessary additional revenue (in terms of taxes, debt, and red tape) is factored in, the net multiplier is likely to be near zero or negative.

Finally, from a risk management perspective, fiscal sustainability requires being aware of contingent liabilities. Some of them are legitimate, such as reconstruction and assistance in the aftermath of natural disasters and the larger outlays required to cover social insurance and medical treatment for an aging population. Other contingent liabilities are more controversial; financial bailouts, for example, can represent a large burden for the state: around 50 percent of GDP in Indonesia and Thailand after the 1997 East Asia crisis, and over 40 percent of GDP in Iceland and Ireland during the 2008–09 crisis.⁹⁵

Dealing with contingent liabilities requires a combination of measures: first, governments must provide the right incentives for self-reliance—for example, by replacing pay-as-you-go systems with fully capitalized old-age pension systems, and by letting risk-takers in financial markets suffer full losses from failed ventures. Second, market solutions should be encouraged by, for example, allowing the issuance of catastrophe bonds in international markets to insure against natural hazards. And, third, resources should be provisioned for residual liabilities that the state may have to bear.

The international community

When can the international community foster resilience and prosperity?

Unmanaged risks do not respect boundaries, and no one country or agent acting alone can deal effectively

BOX 7 *An independent fiscal council can help overcome procyclical fiscal bias*

What is the problem? Fiscal authorities around the world routinely deviate from sustainable plans and suffer from a “procyclical” bias: they tend to run budget deficits and accumulate debt in good times, and then lack adequate resources and flexibility (“policy space”) to stabilize output in bad times.

A proposed solution. The creation of an independent fiscal council can provide the right incentives for the government to build up resources to cope with cyclical downturns and long-run contingencies. The fiscal council would administer a set of flexible fiscal rules mandated by law: deciding on the allocation of deficits over time, signaling when countercyclical action is justified, and monitoring public debt sustainability. Full delegation of policy making to an independent fiscal council is unrealistic because of the political and redistributive nature of fiscal policy. The government, following its political mandate, would retain control over the distribution of expenditures and the structure of taxation. However, isolating some aspects of fiscal policy implementation from the political process and delegating them to an independent council can enhance fiscal credibility and accountability.^a

How can this solution be implemented? Fiscal councils should be designed in a way that avoids political capture, the rise of government incentives to ignore council advice, or the possibility of being dismantled when conflicts within government occur. An effective fiscal council requires independence from the political process—

including competitive appointment and long tenure of council board members, budget independence, and strong accountability mechanisms (such as being evaluated by peer councils or international organizations).^b

Has this solution been implemented anywhere? By 2012, 22 national governments (and counting) had created fiscal councils, with varying characteristics and degrees of relevance.^c The Netherlands’ Centraal Planbureau and the Swedish Fiscal Policy Council are the closest to full-fledged fiscal councils. In Chile, two independent advisory bodies provide key inputs for the projection of the “structural” revenue, which in turn determines government expenditure through a fiscal rule. Acting as advisory bodies, fiscal councils in Morocco, Kenya, and Uganda provide ex ante and ex post assessment of fiscal policies for parliament.

If a council is not feasible, is there an alternative? Establishing an independent fiscal council requires the political appetite for autonomous institutions and strong governance underpinnings and thus may not be possible in all countries. Where an independent council is not feasible, a good foundation for fiscal sustainability would involve adopting transparent and comprehensive fiscal frameworks, including top-down approaches to budgeting. Since the 2000s, Armenia, for instance, has formulated a three-year rolling budgetary framework with expenditure ceilings and integrated it into budgetary law.^d

Source: WDR 2014 team.

a. Debrun, Hauner, and Kumar 2009.

b. Calmfors and Wren-Lewis 2011.

c. IMF 2013.

d. World Bank 2013.

with a risk that crosses a national border. Once triggered, pandemics and financial or economic crises can circle rapidly around an increasingly interconnected world. Armed conflicts can devastate people and spill over into neighboring countries. Natural disasters can ruin a country or an entire region. Climate change is likely to intensify all these risks. Clearly, risks that spread across and affect multiple countries or generations call for international attention.

The international community is a fusion of rather diverse agents, including sovereign governments, international organizations, the global scientific community and media, and civil society. It can offer expertise and knowledge; provide protection through global rules and regulations, capacity building, and international coordination; and pool national resources to better prepare for risk and alleviate crisis situations.

Risks that exceed national capacity. The international community’s engagement may be needed when

countries face severe capacity constraints and have weak or dysfunctional governments.⁹⁶ That is especially the case in fragile and conflict-affected countries, where people face the most extreme risks and obstacles to risk management, with limited access to functioning markets, communities, and public institutions. People living in fragile and conflict-affected countries made up 15 percent of the world population in 2010, but about one-third of people living in extreme poverty.⁹⁷ Conflicts can transcend national borders, resulting in increased refugee populations, spread of communicable diseases, and growing pressure on public goods in neighboring countries absorbing affected populations. Sharing a border with a fragile state can reduce a country’s economic growth by 0.4 percent annually.⁹⁸ By improving economic prospects and the environment for health, security, and education, engagement by the international community can reduce social and economic tensions that inflame and spread conflict, while nurturing opportunities.

International support is also needed when very large shocks, such as natural disasters and financial crises, result in losses that dwarf a country's resources. That can happen even in large and more developed countries, as the Euro Area crisis clearly demonstrates—although low-income countries are disproportionately affected by economic risks and disasters. For example, the Aceh province in Indonesia bore the brunt of a powerful earthquake and tsunami in 2004, leaving more than 500,000 people homeless and an estimated economic loss of 97 percent of Aceh's GDP. The international community set up a special multidonor fund to support reconstruction and establish early warning systems, efforts that almost 10 years after the tragedy have largely proven to be a success.⁹⁹ Success does not always follow, however, as illustrated by the disappointing results of the international community's intervention in Haiti after a powerful earthquake in 2010.¹⁰⁰

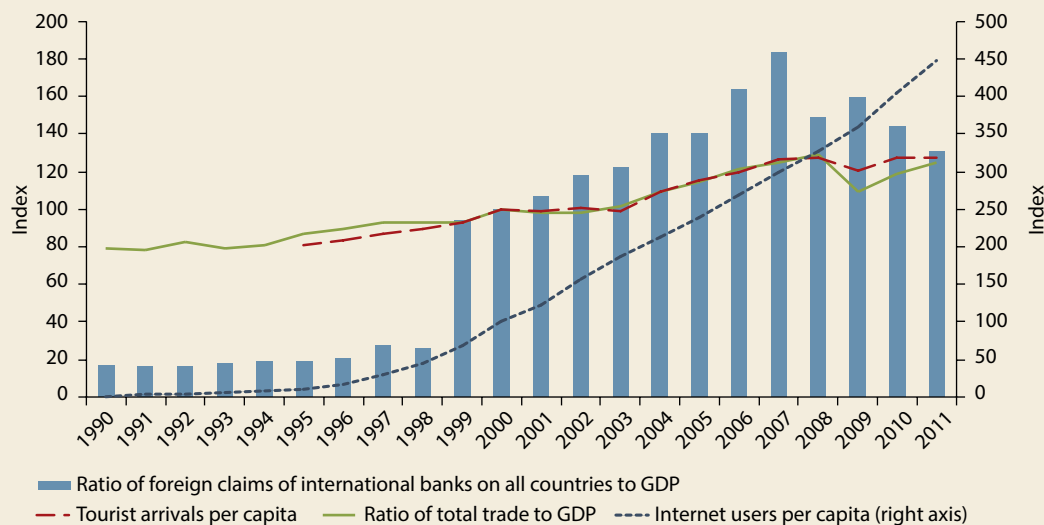
Risks that cross national borders. Openness and modernization have made economic, social, and ecological systems increasingly interconnected (figure 8). Along with opportunities for growth and poverty alleviation, this interconnectedness has also created a set of risks that cross national borders and require critical risk management from the international community, including regional orga-

nizations.¹⁰¹ Increased air travel and trade in goods and services, for instance, can provide free passage to pathogens that cause infectious diseases, some of which can travel around the world in less than 36 hours.¹⁰² Similarly, financial crises can spread through an increasingly complex network of links across financial systems around the world. Rapid economic growth that has relied heavily on carbon-based energy is also related to slowly evolving risks such as climate change and environmental degradation, with potentially irreversible consequences for future generations.

What characteristics improve the international community's capacity to manage risk?

The effectiveness of the international community depends on how well it can fill in knowledge and capacity gaps, establish rules and standards that guide nations in managing their risks, and facilitate and coordinate collective action to manage risks that go beyond national borders. In turn, collective action is facilitated when agents within the international community are united by shared preferences and objectives, or when certain actors have the ability to mobilize resources and enforce agreements—even in the absence of cohesion or unity across nations.

FIGURE 8 *Economic, financial, and social interconnectedness are on the rise*



Source: WDR 2014 team based on data from World Bank World Development Indicators (database), Bank for International Settlements Consolidated Banking Statistics (database), and World Tourism Organization Yearbook of Tourism Statistics (database).

Note: All series are indexed to 100, with 2000 as the base year.

Cohesiveness through shared preferences and objectives. Mutual recognition of the need to address risks enables the international community to better prepare for risks that exceed national capacity—such as the arrangements to provide emergency lending to countries facing acute financing shortfalls, and support for regional insurance pools like the Caribbean Catastrophe Risk Insurance Facility.¹⁰³ Similarly, multilateral cooperation for risks that cross boundaries works best when the interests of various nations are well aligned and are not overruled by competing domestic policy priorities. By helping to align national interests, the almost universal agreement for the need to eliminate smallpox facilitated its eradication. In contrast, in cases where national interests diverge, such as resolving climate change risks and alleviating the plight of people living in fragile and conflict-affected countries, progress can be slow.

Power to mobilize resources and enforce agreements. The international community can have a substantial impact on the management of risks when there is a clear goal around which to mobilize resources. For example, with support from the international community, early warning systems have helped reduce deaths from many types of disasters.¹⁰⁴ Similarly, even if complete international consensus is lacking, the international community can make progress on risks that cross boundaries if it can devise mechanisms for enforcing agreements. That capacity depends crucially on the international community's ability to realign incentives around shared goals and to attract participation of major players. A key element in the success of both the Nuclear Non-Proliferation Treaty and the Montreal Protocol on the protection of the ozone layer, for example, were the threat of security and trade sanctions, respectively, which helped realign national interests and facilitate participation and action.

How can the international community improve its contribution?

The insights from the work by Leonid Hurwicz, Roger Myerson, and Eric Maskin on mechanism design for institutions are all the more important for a collectivity as fluid, diverse, and complex as the international community. Considering incentive constraints (and not only budget and informational constraints) is critical to devising effective mechanisms for the international community to contribute to risk management despite its multiple players, complicated power structures, and diverging goals.

If incentives are aligned: Pursue proactive and well-coordinated interventions. When incentives are aligned and a course of action is clear, scaling up risk management requires proactive and well-coordinated interventions by the international community. In dealing with risks such as pandemics or financial crises in an interconnected world, the effectiveness of these actions rests critically on supporting the capacity of individual countries to monitor and contain risks in their territory. For example, while 36 donors provided support to more than 100 developing countries to prepare for a possible pandemic of avian flu (H5N1) from 2005 to 2010, local monitoring was essential to contain the virus. More resources should be devoted to supporting capacity building for early warning, monitoring, and communication systems, and to designing risk-pooling solutions that reward preparation.

If incentives are not aligned: Use incremental approaches to global solutions. When incentives are not aligned, major sovereigns are not fully engaged, and the consequences of inaction are potentially catastrophic—as with climate change and other environmental risks such as loss of biodiversity—the international community should embrace incremental approaches that can increase traction toward global solutions (box 8). To preserve full participation as the ultimate goal, however, special attention should be given to steps that can help align incentives toward a common objective, even if alignment seems very difficult to achieve. For environmental risks, this effort may consist of dissemination of knowledge and advocacy that can help bring diverging views closer, financial and technology incentives to countries for steps such as preventing deforestation and inducing the use of cleaner technologies, and investments in research and development—for example to construct methods for counteracting greenhouse gas concentration in the atmosphere.¹⁰⁵ In a similar spirit, the New Deal for Engagement in Fragile States (the Busan Partnership) recognizes that the risk of non-engagement can outweigh most risks of engagement in fragile countries; it outlines a framework in which the international community can work to help them strengthen core institutions and policies and reduce the risk of reverting to conflict.¹⁰⁶

An institutional reform to mainstream risk management

The *World Development Report 2014* offers dozens of specific policy recommendations to improve risk

BOX 8 *For certain global risks such as climate change, the international community should embrace incremental approaches that can lead to global solutions*

What is the problem? Management of global risks requires proactive concerted action by sovereign nations. But limited progress in some areas has cast doubt on the possibility of fostering collective action among countries with diverging interests, capacity constraints, and incentives to free ride. Global negotiations to secure agreements with full participation have stalled—most spectacularly for climate change, where persistent inaction could have catastrophic and irreversible consequences. Some potentially useful international actions—including cooperation to develop and share technologies and existing financial instruments—have been postponed in the expectation that they will be part of a “soon-to-be-signed” global agreement.

The proposed solution. For certain global risks such as climate change, the international community should embrace incremental approaches that can increase traction toward global solutions. When incentives are misaligned, major sovereigns are not fully engaged, and the consequences of inaction are disastrous, progress can still be made outside a multilateral treaty. Incremental deals and actions by an initially small group of participants can serve as building blocks to global agreements. By demonstrating benefits from action, the expectation is that the group would include progressively more participant countries over time.

Source: WDR 2014 team.

a. UNEP 2007.

b. Falkner, Stephan, and Vogler 2010; Goldin 2013; Hale 2011.

Are there successful examples? Some remarkable examples exist. The Montreal Protocol to protect the ozone layer was originally signed by 24 countries but won universal ratification during the 1990s with the combined efforts of governments, international organizations, nongovernmental organizations, and scientists.^a Likewise, the Limited Test Ban Treaty, whose signatories expanded from 3 to 119 between 1963 and 1992, paved the way for the more comprehensive Nuclear Non-Proliferation Treaty.

How can it be implemented? Country governments, international organizations, and specialized entities can form a “coalition of the willing” to coordinate, advocate, and take action on climate change.^b The coalition can create incentives for others to join over time by promoting technological change and funding that lowers participation costs (cheaper ways to reduce emissions, subsidies, or technology transfers). It can also partner with scientists, civil society, and the media to induce participants to comply and nonparticipants to join in. International institutions, including an international risk board, can provide platforms for policy debate and monitor, report, and aggregate actions to ensure incremental efforts are on the right path. Strategically, the coalition could anchor its actions to existing global frameworks to demonstrate that incremental and global deals can be connected.

management at different and complementary levels of society (box 9 provides a summary of these policies). Its overarching advice, however, is that these recommendations should be implemented in a proactive, systematic, and integrated way to optimize their effectiveness. For this purpose, the *World Development Report 2014* advocates establishing a national risk board, which can contribute to mainstreaming risk management into the development agenda. This could be a new agency or come from reform of existing bodies: what is most important is a change in approach—one that moves toward a coordinated and systematic assessment of risks at an aggregate level. Implementing this recommendation may require a substantial change in the way national governments develop and implement their general plans, moving from planning under certainty to considering change and uncertainty as fundamental characteristics of modern economies. A national risk board can help governments overcome the political economy obstacles they face when managing risks at the country or even international levels.

Establish a national risk board to manage risks in a proactive, systematic, and integrated way

What is the problem? All too often, risk management strategies and implementation prove ineffective (or introduce other risks) because they are not coordinated among all relevant policy stakeholders. Managing risk in a proactive and integrated way has definite advantages: it can help define priorities, ensure that all contingencies have been considered, and avoid overspending to manage one risk in isolation while neglecting others. Some countries conduct national risk assessments that involve multistakeholder teams from various ministries and often include the private sector and civil society. The Netherlands, the United Kingdom, and the United States have completed this exercise, and other countries, such as Morocco, have begun a process toward it. However, this exercise is usually carried out by a temporary, ad hoc group that exists only while the assessment is taking place. Other countries have created multiminsty bodies in charge of information exchange and

BOX 9 Selected policy recommendations from the WDR 2014

The state has an important role in supporting the contributions of all social and economic systems to people's risk management. The following summarizes selected policy recommendations from the WDR 2014, organized by system, as they are discussed in the Report:

For the household:

- Public health insurance, run in partnership with the private sector, with emphasis on preventive care and treatment of contagious diseases and accidents
- Public education, run in partnership with the private sector, with a focus on flexible skills, adaptable to changing labor markets
- Targeted safety nets for the poor, for instance conditional cash transfers with payments directly to women
- Enforceable laws against domestic abuse and gender discrimination, accompanied by educational campaigns

For the community:

- Public infrastructure for the mitigation of disaster risks, built in consultation with surrounding communities
- Transportation and communication infrastructure, especially to integrate and consolidate isolated communities
- Police protection against common and organized crime, especially targeted to communities under threat
- Enforceable laws against racial or ethnic discrimination, accompanied by educational campaigns

For the enterprise sector:

- Secure and respected private property rights
- Streamlined and predictable regulations for taxation, labor markets, and entry and exit of firms
- Enforceable regulations for workplace safety, consumer protection, and environmental preservation
- Consider the possibility of delinking social insurance (that is, health and old-age pension) from work status

Source: WDR 2014 team.

For the financial system:

- Sound financial infrastructure (payment systems, credit information) to facilitate financial inclusion and depth
- Enforceable regulations that foster both consumer protection and competition among financial institutions
- Macroprudential regulation, for the financial system as a whole, to lessen financial crises and avoid bailouts
- A national financial strategy that addresses trade-offs between financial inclusion, depth, and stability

For the macroeconomy:

- Transparent and credible monetary policy, oriented to price stability and conducted by an autonomous central bank
- For the majority of countries, a flexible exchange rate regime, in a context of transparent and credible monetary policy
- Countercyclical and sustainable fiscal policy, aided by an independent fiscal council
- Provision for contingent liabilities, such as natural disasters, financial crises, and pensions of an aging population

For the international community:

- Engagement in bilateral, regional, and global agreements to share risks across countries, enhance national capacity, and confront common risks, favoring proactive and coordinated interventions
- For elusive global risks such as climate change, formation of a "coalition of the willing" with like-minded country governments, creating incentives for other countries to join in.

The WDR 2014 advocates that these recommendations be implemented in a proactive, systematic, and integrated way. For this purpose, it proposes establishing a national risk board to help mainstream risk management into the country's development programs and suggests the possibility of an international risk board to support the "coalition of the willing."

coordination for risk management, but these bodies usually deal with a single risk—most often with natural disasters, as in Peru, or national security, as in Israel. Few countries actually have an integrated, permanent risk management agency that deals with multiple risks.

What is the solution? To facilitate proactive and integrated risk management at the country level, a national risk board can be set up as a standing (permanent) committee. It can analyze risks, including trade-offs across risks and across risk management policies; consider and publish assessments of risk management practices in the country; define priorities in risk management; and make recommenda-

tions about appropriate policies to be implemented. Institutionalizing the national risk board should add value by enabling risk management to be integrated across all sectors, by challenging inaction stemming from political interests, and by introducing clear accountability mechanisms for implementing agreed risk management measures.¹⁰⁷

How can it be implemented? The national risk board should bring together a wide range of stakeholders. It could be either part of government or an autonomous agency. The board composition would include both policy makers (to reflect political priorities) and independent experts (to incorporate technical knowledge and private sector perspectives). It

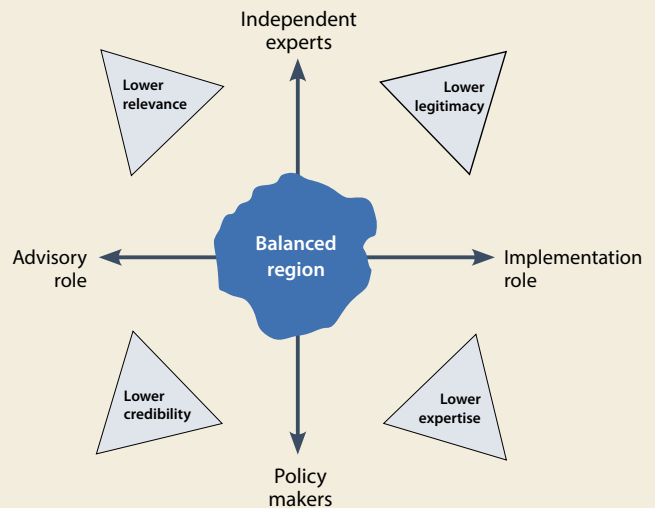
would have the power to issue “act-or-explain” recommendations to relevant authorities responsible for implementing policy—that is, relevant authorities would have to act upon the board’s recommendations or explain why they had decided to reject them. Although the appropriate institutional design of the board will depend on the country’s political and institutional context, the board’s composition and powers should strive to achieve an adequate balance of expertise, credibility, relevance, and legitimacy—that is, to fall within the “balanced” region in diagram 4.

The board’s policy makers could be nominated by the executive branch of government, and the independent experts could come from academia, the business community, and civil society organizations. The board’s expertise would cover the areas of military, security and terrorism risk; economic risk; environmental, health, and technological risk; and social risk. To avoid becoming a powerless body, the board should have sufficient prominence in the public eye. And it should be held accountable by regularly publishing its recommendations accompanied by analysis and statements of policy priorities and by being subjected to annual hearings in front of a legislative committee.

While an autonomous national risk board may have certain advantages, the board could also function as part of government. Indeed, countries as different as Jamaica, Mali, Mexico, Morocco, and Rwanda are considering establishing an integrated risk management function within the government structure—in part following a proposal by the World Economic Forum to establish a country risk officer, similar to the position of chief risk officer that has been created in many multinational companies.¹⁰⁸ This institutional design could be practical in countries with a strong framework for an effective and independent civil service, with the national risk board members appointed as expert technocrats with guaranteed positions for periods that extend beyond the political cycle.

Singapore’s Whole-of-Government Integrated Risk Management framework is an example of an approach that has overcome “silos” within the government.¹⁰⁹ The institutional umbrella of the framework is the Strategy Committee, composed of permanent secretaries from various ministries across government and chaired by the Head of Civil Service. In addition, the Homefront Crisis Management system includes a ministerial committee chaired by the Minister of Domestic Affairs and supported by

DIAGRAM 4 *Balancing the trade-offs in the institutional design of a national risk board*



Source: WDR 2014 team.

the Homefront Crisis Executive Group, comprising senior representatives from ministries and government agencies. This multirisk framework is complemented by agencies focused on specific risks, such as the National Security Coordination Secretariat. Singapore’s institutional arrangement for integrated risk management involves a great deal of specialization and a complex coordination process that has evolved over time. For developing countries, a simpler arrangement that involves less specificity and specialization in its institutional design (and requires less demanding coordination mechanisms) may be a good starting point.

Finally, two important questions should be addressed. First, what can motivate a government to institute a national risk board? An initial impulse is necessary for leaders to overcome opposing incentives and establish a long-term institution. This impulse can come from within the country, through reform-minded political leaders and technocrats, and from outside, through incitement and support from the international community. Once created, the national risk board can challenge inaction or poor practices by introducing clear accountability mechanisms for risk management. A reformist government interested in the continuation of its beneficial legacy may want future governments to be accountable for their actions or their lack of action.

The second question is whether a similar body can be created at the global level—an international risk board—to help address risks that cross national boundaries. An international risk board could involve the scientific and expert community around the world to pool all available knowledge to identify, assess, and manage major global risks. Its major drawback would be that, in the absence of a governing body at the international level, it could lack implementation relevance. That could be remedied, however, if the international risk board were to work in conjunction with the “coalition of willing” countries (see box 8), setting priorities on issues to be tackled urgently and offering credibility and legitimacy to its efforts.

In conclusion: Five principles of public action for better risk management

Analysis throughout the *World Development Report 2014* suggests that, to improve the quality and delivery of social protection, public goods, and public policy that are essential to supporting people’s risk management, public action can usefully be guided by some key principles. The five principles that follow reflect the lessons from best practice around the world and are relevant for different types of risks and countries. Their application should be tailored to specific contexts, however. Although at first glance these principles may appear uncontroversial, in application they involve tensions and trade-offs that make their implementation a challenge.

1. Do not generate uncertainty or unnecessary risks

The state’s policies and actions should strive to reduce risks and lessen uncertainty. At a minimum, the state should not worsen them. How or why would a government do that? First, through its policies, it may perpetuate social norms that discriminate against certain groups and make them more vulnerable. For example, state policies that promote gender inequality or ethnic favoritism harm, rather than help, household and community resilience.

Second, the government may favor the group that supports it politically, whether a small elite or large constituency, against the legitimate interests of others. For instance, states that expropriate financial assets (like savings and pension funds) or private infrastructure (like residential buildings or factories) from some households may obtain short-run gains but end up hampering the ability of the financial system and

the enterprise sector to grow, develop, and provide risk management resources to the entire population.

Third, an internally fragmented government that lacks organization and coordination may end up with ambivalent policies or ineffective implementation. This may occur, for instance, as result of a defective decentralization process, where local and regional governments do not have the necessary resources and capacities to fulfill their responsibilities, do not share the priorities and preferences of the national government, or attempt to free ride on other local and regional governments.

Finally, the government may be guided by ideology, wishful thinking, or simple desperation when confronting difficult and genuine problems, instead of relying on measures based on good evidence and analysis. A common example is labor market regulations that purport to defend workers’ interests but wind up protecting only a few and contributing to the roots of a large informal sector. Inflationary financing of budget deficits or variable and inconsistent macroeconomic policies in the face of crisis are other examples: sooner rather than later, both paths lead to increased uncertainty, macroeconomic instability, and possibly even protracted recessions.

2. Provide the right incentives for people and institutions to do their own planning and preparation, while taking care not to impose risks or losses on others

The challenge for public policy is to create incentives for people to do their own risk planning and preparation, avoiding circumstances in which benefits are privately appropriated but losses are imposed on others.

Consider financial bailouts. They are detrimental not only because they can produce a large fiscal burden but also because they provide incentives for excessive risk taking. Yet bailouts are sometimes necessary to prevent a systemic collapse of financial intermediation. Bailouts should be avoided—mostly by using well-established, clear, and transparent macroprudential policies—but if bailouts occur, they should be designed to avoid providing the wrong incentives for the future. Good examples of orderly financial bailouts are hard to find, but the Turkish experience in the wake of the 2000–01 banking crisis (and especially the unwavering stance of the country’s bank regulatory and resolution agencies) offers a case to analyze and follow.¹¹⁰

In a very different realm, social protection can be criticized for not encouraging personal self-reliance

and being an unsustainable burden to the state. The evidence, however, demonstrates that these problems can be avoided by a design that takes people's incentives directly into account. Well-designed safety nets—such as conditional cash transfers or workfare programs, as implemented in Bangladesh, Brazil, India, and Mexico, to name a few—have promoted better household practices in the areas of education, health, and even entrepreneurship, while remaining fiscally sustainable.¹¹¹

In all cases, to manage risks effectively, two changes in people's mindset related to individual and social responsibility are critical: moving from dependency to self-reliance, and from isolation to cooperation. Providing the right incentives can contribute in both regards.

3. Keep a long-run perspective for risk management by building institutional mechanisms that transcend political cycles

A major challenge for public action is to establish institutional mechanisms that induce the state to keep a long-run perspective that outlasts volatile shifts in public opinion or political alliances. For instance, the state's provision of education and health services is a large investment in risk preparation for families and communities that must be funded on a continuous and sustainable basis to succeed: that entails long-run planning. In the case of health services, Thailand and Turkey offer successful examples with their recent shift to universal health insurance programs.

Consider also the following two examples from financial and macroeconomic policy. For the financial system to support risk management, it is essential to strike the right balance between inclusion and stability. This balance can be assessed only through comprehensive long-run planning, like that being done in Malaysia, where the strategy for the financial sector is prepared by the central bank, in collaboration with the ministry of finance and the private sector. Countercyclical monetary and fiscal policies also require a long-run perspective, which allows them to manage the business cycle by using resources built over a prolonged time and in different scenarios. Best practice suggests targeting a long-run budget balance, as Chile, Colombia, and Norway, among others, are doing. Institutional mechanisms that transcend the political cycle—such as a national risk board and an independent fiscal council—can help maintain a long-run focus on risk management.

4. Promote flexibility within a clear and predictable institutional framework

Flexibility in adjusting to new circumstances is essential to promoting resilience and making the most of opportunities. Prime examples include household migration in response to shifting economic trends, rural communities' adaptation to climate change, and enterprise renewal in the face of technological and demand shocks. Flexibility should not imply arbitrary discretion or haphazard responses, however. A challenge for the state is to promote flexibility while preserving a sensible, transparent, and predictable institutional structure.

For enterprises, the Danish model of “flexicurity” offers such balance, combining ease of hiring and firing of workers alongside a strong social safety net and reemployment policies. The result is a dynamic economy with high turnover in employment but short spells of unemployment. For the macroeconomy, inflation targeting regimes with floating exchange rates offer a good model of flexible yet institutionally sound monetary policy. By 2012, 27 countries around the world had adopted an inflation targeting regime. With the onset of the European Monetary Union in 1999, many countries that had practiced inflation targeting in the 1990s abandoned the regime. Given the prolonged recession and uncertainty in the Euro Area, monetary flexibility could have been a useful tool these countries no longer have.

5. Protect the vulnerable, while encouraging self-reliance and preserving fiscal sustainability

The harsh reality is that throughout the world, many people do not have the material resources and information necessary to confront the risks they face. The everyday struggle to eke out a living can make planning ahead hard for the poor. The challenge for the state is to protect the vulnerable while preserving fiscal sustainability—and encouraging self-reliance.

For households that remain highly vulnerable to shocks, the state can provide safety nets to replace the costly coping mechanisms that undermine consumption, human capital, and productive assets. Safety nets are possible even in low-income countries, provided the support is targeted to vulnerable populations and is designed to incentivize work effort. Ethiopia's Productive Safety Net System, for example, demonstrates how a well-designed safety net can protect millions of households from food insecurity while investing in community assets.

The international community can also provide support to vulnerable populations with resources and expertise. Although much criticized, foreign aid has been successful when provided in coordination with accountable local institutions. Such was the case when foreign aid helped rebuild infrastructure and establish early warning systems in Indonesia after the 2004 tsunami.

At the end of the day, protection of the vulnerable entails taking the measures necessary for sustainable development—development that eliminates extreme poverty and allows people to escape vulnerability through the sustained growth that risk management can offer.

Some closing thoughts

The fate of individuals and families can change for the better if they plan and prepare to face the risks

and opportunities that lie at the heart and core of modern life. So too can the fate of communities and countries improve, if they share the continuous responsibility required to manage risk successfully.

“I grew up in a war environment. And what I learned is that you can plan your fate, at least to some degree, if you assess your risk and do something about it.”

—Klaus Jacob, disaster risk management expert at Columbia University and World War II survivor¹¹²

“There was a time I used to walk to work every day. The route I had to take was dangerous, and many people were victims [of] robbery and physical abuse. So, yes, I have overcome risk to pursue opportunity.”

—Kariuki Kevin Maina, student, Kenya
Contribution to the WDR 2014 website

Notes

1. Dercon, Hoddinott, and Woldehanna 2005.
2. Buvinić and Morrison 2000.
3. World Bank 2012d.
4. WHO 2013.
5. Baulch 2011 offers a useful survey.
6. Paul 2009.
7. Didier, Hevia, and Schmukler 2012.
8. Dercon and Christiaensen 2011.
9. See Karlan and others 2012 for Ghana; and Cole, Giné, and Vickery 2013 for India.
10. Hoddinott, Rosegrant, and Torero 2012.
11. Hallegatte 2012a.
12. While the costs of preparing for risk must be incurred predominantly up front, the benefits tend to accrue over time and are therefore more uncertain. The probability of a risk materializing is thus central to any assessment of a potential intervention. In formal benefit-cost analyses, this probability is usually taken into account either implicitly (by basing calculations of averted costs on average historical data) or explicitly (by weighting the potential benefit of a risk management intervention in the event of a shock by the probability of that shock occurring). See Wethli 2013 for the WDR 2014.
13. See, for example, Bodie, Kane, and Marcus 2011.
14. See Kuznets 1955 and Dasgupta and others 2002. The trade-offs mentioned in the text are *perceived* to exist by some experts and a large share of the public, as reflected in opinion polls, but may not be present in reality. Recent analyses find, for instance, that economic growth and environmental protection as well as social inclusion are often complementary. See World Bank 2012b.
15. Hoddinott, Rosegrant, and Torero 2012.
16. Dethier, Hirn, and Straub 2011; Kehoe and Prescott 2007.
17. Bruno and Easterly 1998.
18. Bernoulli 1738; von Neumann and Morgenstern 1944.
19. Allais 1953; Kahneman and Tversky 1979.
20. Black 1948; Buchanan and Tullock 1962; Olson 1965.
21. Hurwicz 1960; Myerson 1979; Maskin 1999.
22. The concept of a risk chain is discussed and illustrated in Alwang, Siegel, and Jørgensen 2001. See also Barrett 2002; Heltberg, Siegel, and Jørgensen 2009.
23. Ehrlich and Becker 1972. See also the extension in Muermann and Kunreuther 2008 and the applications in Gill and Ilahi 2000; Holzmann and Jørgensen 2001; and Packard 2002.
24. Khokhar 2013 for the WDR 2014.
25. World Bank World Development Indicators (database).
26. World Bank 2012c.
27. For a rich discussion of the potential complementarity between insurance and protection, see Erlich and Becker 1972.
28. *Economist* 2013.
29. Hallegatte 2012b.
30. Carter and others 2007.
31. FEMA 2010.
32. Gourinchas and Obstfeld 2012; Schularick and Taylor 2012.
33. Hallegatte 2012b.
34. La Porta and others 1998.
35. See, for example, Tornell and Velasco 1992.
36. This kind of trade retaliation was avoided during the 2008–09 global financial crisis, in part because of successful coordination by the international community—in contrast to the well-known “beggar-thy-neighbor” trade policies that exacerbated the Great Depression (Eichengreen and Irwin 2010). However, the international community has been less successful in avoiding export restrictions during the food price crises in recent years (Martin and Anderson 2012).
37. Knight 1921.
38. Hallegatte and others 2012.
39. Čihák and others 2012.
40. For a review of the literature on risk sharing and family and network formation, see Fafchamps 2011.
41. Acemoglu and Robinson 2012 compile many examples of such failures.
42. Reinikka and Svensson 2005; Speer 2012; Devarajan, Khemani, and Walton 2011.
43. Becker 1993.
44. Oviedo and Moroz 2013 for the WDR 2014.
45. De Weerd and Hirvonen 2013 for Tanzania; Yang and Choi 2007 for the Philippines; Paulson 2000 for Thailand.
46. WDR 2014 team based on OECD Programme for International Assessment (PISA).
47. Xu and others 2003.
48. Demirgüç-Kunt and Klapper 2012.
49. Duflo 2003; Thomas 1990.
50. Duflo 2003; see also Thomas 1990 and Lundberg, Pollak, and Wales 1997.
51. WDR 2014 team based on World Bank World Development Indicators (database).
52. World Bank 2005.
53. Thoresen and Fielding 2011 show how expanding health care coverage can put considerable pressure on the sustainability not only of fiscal resources, but also human resources.
54. Premand 2013 for the WDR 2014.
55. Paxson and Schady 2007 and references therein; Macours, Schady, and Vakis 2008; see also references in Fiszbein and Schady 2009.
56. WDR 2014 team based on Demographic and Health Surveys.
57. Coleman 1988; Putnam 1993.
58. De Weerd 2001.
59. Gertler and Gruber 2002.
60. For example, Aldrich 2011 shows that social capital plays a key role in communities’ ability to recover from natural disasters.
61. Alesina, Baqir, and Easterly 1999.
62. Narayan, Pritchett, and Kapoor 2009; Bowles and Gintis 2002.
63. Bjorkman and Svensson 2009; Pandey and others 2007.
64. Knight 1921; Coase 1937.
65. For seminal papers on the topic, see Baily 1974 and Azariadis 1975.
66. Schumpeter 1942.
67. Hsieh and Klenow 2009.
68. Baicker, Cutler, and Song 2010.
69. Bergoing, Loayza, and Repetto 2004.
70. An interesting example of formalization leading to both enhanced environmental protection and higher incomes has recently occurred in Peru. In recent years, informal mines in Peru have sprung up in response to rising gold prices. Ignoring existing regulations, these informal mines have caused significant deforestation. The mercury used in the extraction process has contaminated rivers and the atmosphere and threatened human health. In the La Libertad region, the Poderosa Mining Company took an innovative approach to the problem after informal miners invaded one of its mining concessions. The company began to formalize the invading

- miners, signing agreements that allowed them to continue mining under its direction. The agreements, which meet international environmental management quality standards, have increased the small miners' income and decreased the harm from deforestation and mercury contamination. UNEP 2012.
71. World Bank 2012d; Loayza and Rigolini 2011.
 72. Calderón and Fuentes 2012.
 73. Caballero and others 2013.
 74. Miller 1986.
 75. Diamond and Dybvig 1983.
 76. Laeven and Valencia 2012.
 77. Han and Melecky 2013 for the WDR 2014; Cull, Demirgüç-Kunt, and Lyman 2012.
 78. Brix and McKee 2010.
 79. Gupta 2013.
 80. World Bank 2012a.
 81. Borio 2003 provides a discussion of the differences between a traditional, microprudential regulatory framework and a macroprudential regulatory approach.
 82. Maimbo and Melecky 2013 for the WDR 2014.
 83. Barro 2009.
 84. Hnatkovska and Loayza 2005.
 85. Easterly and Servén 2003.
 86. Prasad and Gerecke 2010.
 87. Education International 2009.
 88. Svensson 2012; Bruno and Shin 2013.
 89. Edwards and Levy Yeyati 2005.
 90. Ramcharan 2007.
 91. Edwards 2004; Lane and Milesi-Ferretti 2012; Ghosh, Qureshi, and Tsangarides 2013.
 92. Kaminsky, Reinhart and Végh 2005.
 93. Parker 2011.
 94. See Kraay 2012 and Ilzetzki and Végh 2008 for surveys of the literature on developing countries; and Barro and de Rugy 2013 and Ramey 2011 for surveys of the literature on developed countries.
 95. Laeven and Valencia 2012.
 96. DFID 2005; OECD 2011a, 2012; World Bank 2011.
 97. OECD 2012.
 98. DFID 2005.
 99. See "Resilience Stories" at the Sendai Dialogue website at <https://www.gfdrr.org/node/1308>.
 100. Larrimore and Sharkey 2013.
 101. Not all risks that exceed national borders are truly global. Some risks, such as armed conflict between neighboring countries or disputes over natural resources, may affect only a few countries. Such risks may be more appropriately or effectively managed by regional institutions.
 102. Jonas 2013 for the WDR 2014.
 103. Mahul and Cummins 2009.
 104. World Bank and United Nations 2010.
 105. Royal Society 2009.
 106. OECD 2011b.
 107. Graham and Wiener 1995; World Economic Forum 2007.
 108. World Economic Forum 2007.
 109. OECD 2009.
 110. Damar 2007; Ersel and Ozatay 2008.
 111. Fiszbein and Schady 2009; Alderman and Yemtsov 2012.
 112. Quoted in Eric Klinenberg, "Adaptation: How Can Cities be 'Climate-proofed'?" *The New Yorker*, January 7, 2013, 33.

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The past 25 years have witnessed unprecedented changes around the world—many of them for the better. Across the continents, many countries have embarked on a path of international integration, economic reform, technological modernization, and democratic participation. As a result, economies that had been stagnant for decades are growing, people whose families had suffered deprivation for generations are escaping poverty, and hundreds of millions are enjoying the benefits of improved living standards and scientific and cultural sharing across nations.

As the world changes, a host of opportunities arises constantly. With them, however, appear old and new risks, from the possibility of job loss and disease to the potential for social unrest and environmental damage. If ignored, these risks can turn into crises that reverse hard-won gains and endanger the social and economic reforms that produced these gains.

The *World Development Report 2014 (WDR 2014), Risk and Opportunity: Managing Risk for Development*, contends that the solution is not to reject change in order to avoid risk but to prepare for the opportunities and risks that change entails. Managing risks responsibly and effectively has the potential to bring about security and a means of progress for people in developing countries and beyond.

Although individuals' own efforts, initiative, and responsibility are essential for managing risk, their success will be limited without a supportive social environment—especially when risks are large or systemic in nature. The *WDR 2014* argues that people can successfully confront risks that are beyond their means by sharing their risk management with others. This can be done through naturally occurring social and economic systems that enable people to overcome the obstacles that individuals and groups face, including lack of resources and information, cognitive and behavioral failures, missing markets and public goods, and social externalities and exclusion. These systems—from the household and the community to the state and the international community—have the potential to support people's risk management in different yet complementary ways.

The Report focuses on some of the most pressing questions policy makers are asking. What role should the state take in helping people manage risks? When should this role consist of direct interventions, and when should it consist of providing an enabling environment? How can governments improve their own risk management, and what happens when they fail or lack capacity, as in many fragile and conflict-affected countries? Through what mechanisms can risk management be mainstreamed into the development agenda? And how can collective action failures to manage systemic risks be addressed, especially those with irreversible consequences? The *WDR 2014* provides policy makers with insights and recommendations to address these difficult questions. It should serve to guide the dialogue, operations, and contributions from key development actors—from civil society and national governments to the donor community and international development organizations.

