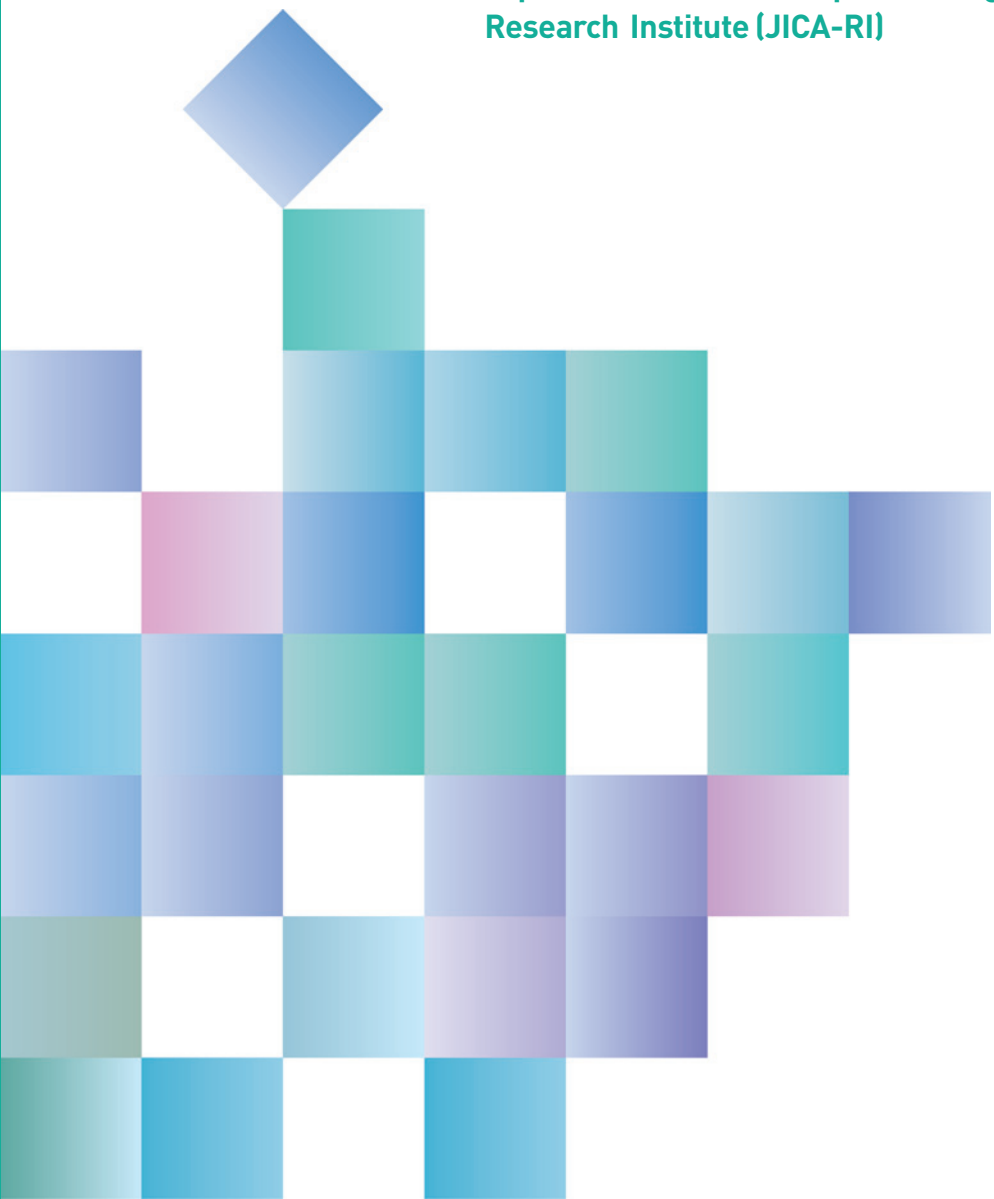
Perspectives on the Post-2015 Development Agenda

Japan International Cooperation Agency
Research Institute (JICA-RI)



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June 2014
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The chapters with asterisk (*) are
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http://jica-ri.jica.go.jp/publication/workingpaper/index.html.

Preface

This volume is a compilation of working papers authored by the members of the JICA Research Institute on how the post-2015 developmental framework should be designed and put into practice. The chapters are based on literature surveys, empirical research and practical experience from JICA field operations. Collectively, they argue the importance of three perspectives and/or concepts in framing the post-2015 development agenda: inclusiveness, resilience, *and* human security. I hasten to add here that, although we have not addressed the issue of environmental sustainability in this volume, it does not mean that we are ignoring the centrality of that issue. Indeed our conviction is that development must be inclusive, resilient, and environmentally sustainable; what we have attempted here is simply to address the first two of the three fundamental concepts that global development in the post-2015 era must embody.

We have compiled this volume to provide discussion-papers as a contribution to the already on-going debate on the post-2015 agenda. As such, the views and opinions contained herein are those of the authors, and do not necessarily represent the official views of the Japan International Cooperation Agency.

June 2014

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Executive Summary

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Executive Summary

Hiroshi Kato

Introduction

There are two premises underlying this volume. The first is that two concepts, i.e., "inclusiveness" and "resilience," are of paramount importance in framing the post-2015 agenda, based on an analysis on what has been achieved and what has not under the MDG framework. As these two concepts have increasingly become the focus of attention in international development discourses, we would like to contribute to the debate by sharing our views, backed by research and based on JICA's practical experiences on the ground.

Another premise of this volume is the centrality of the concept of human security in framing the post-2015 agenda. It was in the course of our enquiry into inclusiveness and resilience that we came, gradually, to realize the conceptual closeness among the two concepts "inclusiveness" and "resilience," and human security. Thus Chapter 4 is a summary of our conceptual framework that tries to connect them, arguing that human security could work as a guiding principle of the post-2015 development framework if we want to achieve inclusive and resilient development.

Main Messages

The main messages that have emerged from the eight chapters can be summarized in four points, as follows:

1 The central challenge is to end poverty through economic growth.

2 The quality of development matters.
  2.1 Development must be inclusive.
  2.2 Societies must be robust and resilient against various shocks.
  2.3 Challenges in fragile states warrant special attention.

3 The human security concept can provide a guiding principle of the post-2015 development framework.

4 Comprehensive approaches are required for the achievement of various goals.

Below is a summary of each of these four contentions.

1. The central challenge is to end poverty through economic growth.

1.1 While the current MDG framework has resulted in impressive achievements on many fronts, there remain tremendous challenges of completing the unfinished business. Obviously the most notable among such remaining goal is the eradication of absolute poverty. A considerable 24% percent of the world's population, amounting to more than 1.2 billion, are still living a life of abject poverty, living on less than $1.25 a day.

1.2 As Sapkota and Shiratori (Chapter 1) highlight, the degree of achievements in poverty reduction varies a great deal across countries, meaning that there are indeed a number of countries and areas lagging far behind. The two main areas lagging behind are South Asia and Africa, where poverty only declined to 36% from 53.8%, and to 47.5% from 53.8%, respectively, during the period between 1990 and 2008. Assuming, so far, that poverty reduction has mainly lifted those who were just below the poverty line out of poverty, the remaining challenges in poverty reduction in the decades to come are likely to be even more daunting than the ones that have been dealt with thus far.

1.3 Literature shows that there is a strong and positive correlation between a country's economic growth and poverty reduction, and that very few countries that have experienced negative economic growth rates have still experienced income growth of the poor. It therefore seems possible to believe that economic growth provides a critical impetus for poverty reduction.[1] Thus, if the post-2015 development framework is to aim at substantial further poverty reduction—World Bank President Jim Yong Kim recently called for a commitment by the international community to end extreme poverty by 2030—we need to assure steady and substantial economic growth. But how much growth is needed to reduce poverty as much as we want? Even if we can assume that a one per cent increase in per capita income will reduce poverty by 1.7 per cent on average,[2] a great deal of growth will need to occur.[3]

1. Dollar and Kraay (2002).

2. Operationalizing Pro-Poor Growth (OPPG) Program (2005).

3. Bluhm, de Crombrugghe and Szirmai (forthcoming) estimate that even with with optimistic growth scenarios, our world will have a poverty rate of approximately 10% globally in 2030.

2. The quality of development matters.

What makes our task even more daunting, however, is the fact that economic growth alone will not bring about the *kind of development* we want. First, economic growth does not automatically result in poverty reduction; we need to remember that economic growth is a necessary, but not a sufficient, condition for poverty reduction. We must therefore make sure that the fruit of economic growth translates into poverty reduction, and that growth does not result in intolerable degrees of social and economic inequalities.

And second, growth needs to be sustained over the long term in order to help countries and people emerge out of poverty. What sub-Saharan Africa needs, for example, is not only growth but *sustained* growth over an extended period of time.[4] Here again, let us remember that lower net inequality is reported to be robustly correlated with faster and more durable growth, for a given level of redistribution.[5] *Equitable* growth can indeed help *sustained* growth.

2.1 Development must be inclusive.

2.1.1 Based on the above points, we argue that the post-2015 development framework must aim at growth that does not result in unjustifiable levels of inequality in income. The objective of reducing inequalities is one of two essential components of what we call "inclusive" growth (or development), essentially meaning the type of growth (or development) that leaves behind as few people in society as possible.

2.1.2 Going beyond the concept of equality in terms of income, Kozuka (Chapter 5) proposes another necessary condition for growth (or development) to be called inclusive. Drawing on the idea developed by Roemer (1998), he defines inclusive development as development that enhances people's well-being through advancing equality of opportunity for all members of society, with particular attention to the poor, the vulnerable, and

4. It must be remembered that even supposing a continued growth of around 5% for over 30 years, the average per capita GDP of Sub-Saharan Africa in 2030 is estimated to linger around $4,000, and the percentage of the population with daily income of less than $1.25 will only decrease from 44.15% in 2010 to 37.77% in 2040 (African Development Bank 2011).

5. Berg and Ostry (2011).

those disadvantaged groups normally excluded from the process of development. Kozuka contends that inequalities of outcome of development, including inequality in income, may be acceptable as long as they are the result of differences in the degree of effort committed by different individuals. However, if inequalities of developmental outcomes are caused by differences in opportunities, then Kozuka argues that policies need to be introduced to redress such inequalities and to level the playing field.

2.1.3 Kozuka specifically highlights the importance of such domains as education and early childhood development, because they are fundamental in building people's physical and cognitive capacities, and hence any serious inequality of opportunity in these areas will exacerbate inequality in their future. He therefore goes on to emphasize the crucial importance of achieving universal primary education, assuring basic literacy and numeracy for every child, along with education of children with disabilities and the improvement of secondary school enrollment in low-income countries.

2.1.4 While Kozuka focused his discussion on the importance of education, his argument can also be extended to justify or call for stronger support in other basic social sectors such as health and nutrition, as they both serve equally importantly to provide everyone with a level playing field. Thus the call for the development of Universal Health Coverage can very well be justified on this ground. Nutrition too warrants greater attention in the new-generation development framework, given the less-than-desirable performance in achieving Goal 1C: halving hunger from 1990 to 2015. His argument also demands that disadvantaged segments of society must be given a level playing field. Thus the importance of education, health, and nutrition cannot be overemphasized in view of assuring a level playing field to everyone, something demanded by the concept of inclusive development.

2.1.5 The chapter by Lamichhane, Paudel and Kartika (Chapter 6) provides evidence in support of Kozuka's argument. Using the nationally representative dataset of Nepal, this paper demonstrates that figures for poverty headcount, incidence, and severity are higher among people with disabilities compared to

their counterparts without disabilities. This indicates that vulnerable people are likely to fall into the poverty trap. However, the paper, rather strikingly, found that persons with disabilities receiving at least 10 years of schooling are likely not to be poor. This latter finding seems to support Kozuka's contention by suggesting that if given appropriate opportunities, even those people generally considered vulnerable—like people with disabilities—can very well attain a life of decency.

2.1.6 In addition to inequality among individuals, regional inequalities can also be a serious issue, the most important of which are inequalities between rural and urban areas. Sapkota and Shiratori (Chapter 1) report that, generally, a majority of countries have experienced a higher rate of poverty reduction in urban than in rural areas. This suggests, just as argued by the IMF, that "rural areas remain a huge challenge—one that underscores the importance of policies that can improve rural livelihoods." [6]

2.1.7 Finally, as vividly demonstrated by recent as well as numerous historical events, inequality among people and regions has often resulted in social and political turmoil. A research project by the JICA-RI has reported that inequalities among social groups (also known as "horizontal inequalities") sometimes lead to social and political unrest.[7] Therefore measures to address inequalities among people and groups within and across countries can be justified not only on ethical grounds but also for practical reasons.

2.2 Societies must be robust and resilient against various shocks.

2.2.1 The data analysis by Sapkota and Shiratori (Chapter 1.) highlights that progress toward the MDGs has been critically hindered by shocks and crises such as natural disasters, man-made disasters, economic and financial crises, and conflicts. The next generation development framework must establish ways to deal with shortcomings in the current MDGs by finding ways of building up societies and communities to be better-prepared to deal with these external shocks.

6. IMF (2013).

7. Mine and Katayanagi (2013).

2.2.2 While providing some more details on the magnitude of hindrances caused by various shocks, Chapters 1 and 2 draw our attention to the fact that no poor or fragile countries affected by armed conflict have achieved a single MDG. In addition, millions of people around the world fell into poverty in the aftermath of natural disasters (such as floods, tsunamis and earthquakes) and economic crises such as the 2000-2001 Turkish financial crisis, the 1997 Asian financial crisis, the 2008-2009 global economic crisis and the 2008 global food crisis. These conflicts and crises bring not only life-threatening challenges to the population of the affected areas but they also reverse the cycle of poverty reduction – poor people tend to be disproportionately affected by such crises, as they are more likely to live in risk-prone areas.

2.2.3 The forthcoming post-2015 global goals, therefore, will only be complete if they are administered with due consideration for our society's ability to mitigate and cope with these downside risks. It is with this recognition that some scholars have already started arguing to address various risk factors by setting resilience goals in the post-2015 development framework.

2.2.4 Shimada (Chapter 7) proposes a resilience framework in which resilience is defined as the ability of social units (government, local administrations, organizations, and communities) to mitigate and carry out recovery activities in ways that minimize social disruptions. Chapter 8, also by the same author, examines the process of recovery and reconstruction in Kobe, Japan, in the aftermath of the Great Hanshin Awaji Earthquake in 1995 and argues that society can be more resilient when it has strong social capital.

2.3 Challenges in fragile states warrant special attention.

2.3.1 Development of the countries generally categorized as fragile states should constitute a central pillar in the upcoming development agenda, and this is with good reason. As Murotani (Chapter 2) states, MDG achievements are painfully slow in fragile states, no matter how the term is defined. Statistics show that no fragile states or conflict-affected countries are expected to achieve a single MDG goal by 2015 (World Bank 2011), a fact

that fully warrants international support to such countries in their pursuit of poverty reduction.[8]

2.3.2 Looking into the future, the majority of the world's poor is likely to be found in fragile countries. Based on a literature review, Murotani (Chapter 2) highlights how fragile states and poverty issues will take an entirely different shape in the future: while only 20% of the world's poor lived in fragile states in 2005, this share will exceed 50% in 2014, and the share of the world's poor in fragile states will be close to two-thirds in 2030.[9] In addition, many of today's fragile countries already are or will become middle income countries. These two prospects imply that the poverty issue in the post-2015 era will be quite different from the one that we have been familiar with, where the majority of the world's poor people were living in poor but stable countries.

2.3.3 Absolute poverty lingering in middle-income yet fragile countries can have several implications. Greater levels of income disparity within the countries can undermine the legitimacy of governments and hence the social and political stability of countries. And the governments of fragile states are, by definition, likely to be less than effective in addressing or unwilling to address the poverty issue appropriately.

3. The human security concept can provide a guiding principle.

3.1 As stated earlier, this volume is premised on the understanding that the concepts of inclusive development and resilience are conceptually quite akin to the human security concept. Murotani (Chapter 4) attempted to verify this assumption, as follows. First, putting people at the center, the concept demands attention not only to the national average but also to inequality within states. In other words, while the human security concept presupposes the need for economic growth because protection and empowerment require a certain level of pubic goods provision and private sector activities, the concept demands that growth be *inclusive* in income distribution and equitable in terms of opportunity. Second, as the

8. One must note, however, that while fragile states are clearly lagging behind in achieving many of the MDG goals, their absolute and relative performance in MDG indicators is not worse than non-fragile states. The reason that most of the fragile countries are failing to achieve the targets is that they simply started very low.

9. Based on Chandy et al. (2013).

human security concept highlights the importance of people's preparedness to manage downside risks, it encourages community and individual empowerment to engage in activities for the prevention and mitigation of risks, urgent responses to sudden shocks, and recovery from damage. All these point to the importance of *resilience*.

3.2 As Murotani notes, this volume is not the first to advocate for the centrality of the human security concept in the post-2015 development framework. For example, Koehler et al. (2012) have already proposed the human security concept as a conceptual framework for the post-MDG agenda. As the Report of the Secretary General in January 2014 made clear, "[b]y focusing our efforts on advancing the interconnected pillars of peace and security, development and human rights, human security provides the people-centred approach by which to comprehensively address the totality of the challenges we face and to translate our efforts into actions that give rise to more effective and tangible improvements in the daily lives of people."[10] The concept can provide broad relevance to the post-2015 development agenda, Murotani highlights that there are five principles that the concept demands be incorporated in the agenda. They are: a focus on extreme difficulties or dangers, emphasis on preparedness, a multi-sector and comprehensive approach, the mobilization of multiple actors in addressing various developmental challenges, and balancing the social, economic, and environmental dimensions of sustainability.

3.3 However, being comprehensive, multi-dimensional, and often subjective, the human security concept is a concept not easy to translate into specific goals or performance indicators. What it does demand, rather, is that goals and indicators should address not only the national level statistics, but should capture the situation of every individual (in order that no one is left behind), monitor the multi-sectoral development progress comprehensively, and encourage preventative measures against downside risks.

10. United Nations (2014).

4. Comprehensive approaches are required for the achievement of various goals.

4.1 As the debate on the post-2015 agenda intensifies, so does the deliberation on goals and indicators. While setting appropriate goals and indictors is undeniably important, we must remind ourselves of several intrinsic limitations of goals and indicators. First, though obvious, no matter how comprehensive a set of goals and indicators we aim at, we may never be able to capture the whole complicated developmental process.

4.2 Moreover, there are important cross-cutting factors that, however important, do not appear either as goals or indicators. For example, one important development driver that has only scarcely been covered in the current MDGs is infrastructure, with the sole exception of safe drinking water and basic sanitation treated under Goal 7 (Target 10). This seems reasonable: the MDG goals should include only objectives that are truly worthy of being treated as goals, rather than things that work more as means to ends.

4.3 Having said that, we cannot but emphasize important multi-faceted impacts of infrastructure development, especially for transport and power, in addition to water and sanitation. Sapkota (Chapter 3) revealed that infrastructure such as access to electricity, access to clean drinking water sources, and road density have significant positive impacts on the Human Development Index (HDI), and particularly, that road density is positively correlated with the income index of countries. Thus he argues that eradication of all forms of infrastructure poverty (defined as "lack of access to infrastructure services") is a necessary condition to eliminate human poverty sustainably.

At the more micro level, another study has revealed that improving the rural water supply system has resulted in the improvement of girls' school enrollment.[11] Other studies refer to the effect of irrigation infrastructure development on social capital formation.[12] Furthermore, road development has effects on income, and water supply development on sanitation and body weight of children in poor households.[13]

11. Yuki (2008).
12. Shoji et al. (2010).
13. Yamauchi et al. (2010).

4.4 Thus, infrastructure development is an act of capital formation that can result in a wide variety of positive developmental impacts, and yet, being a means to ends, infrastructure development *per se* should not be eligible for entry onto the list of global development goals. This does not mean, however, that consistent effort toward infrastructure development is of lesser importance.

4.5 The above argument—that there are factors that are intrinsically difficult to capture as goals—reminds us of another important consideration in policy making: that is, goals and targets must not be taken as uniformly pre-determining the desired policy interventions to address them. For example, the goal of improving school enrollment for girls might justify such direct policy options as construction of more schools with latrines for girls, promotion of CCTs, and training of women teachers. While these are all legitimate policy options, there are many other and equally reasonable policy approaches, such as rural roads and water supply development, just to name a few. The choices between these policy options must be left to the decisions of political leaders in each country, based on the contexts and resource availability.

Chapter summaries

Chapter 1: Achieving the Millennium Development Goals: Lessons for Post-2015 New Development Strategies (Jeet Bahadur Sapkota and Sakiko Shiratori)

Using a MDG Database from the World Bank, this paper attempts an assessment of progress towards key indicators between 1990 and 2010. This study also examines how different initial conditions have affected the speed of progress and how overall improvement does not necessarily mean the narrowing of inequality within and/or across the countries involved. It illustrates in particular that low-income countries and fragile states are lagging behind in MDG performance. It concludes by suggesting that two new concepts be incorporated in the post-2015 development strategy: inclusive development and resilient society.

Chapter 2: The "Fragile States" Agenda in the Post-2015 Development Framework: Significance and Caveats (Ryutaro Murotani)

This chapter tries to identify how countries often referred to as fragile states are performing in the current MDGs achievements and what kind of consideration, if any, they deserve in the decades to come. Based on a quick review of the literature, the chapter concludes that fragile states are indeed poor performers in terms of the MDGs, and that the poor population in the post-2015 era will be concentrated in those countries. It goes on to suggest, however, that it is difficult to design a common framework in the post-2015 framework to address various challenges of fragile states, as the countries are too diverse to be eligible for any uniform policy considerations. It also warns that fragility exists not only in countries often labeled as such, but at sub-national levels in many other countries considered to be stable. The paper also emphasizes the importance of preventive measures to avoid countries falling into fragility.

Chapter 3: Access to Infrastructure and Human Development: Cross-Country Evidence (Jeet Bahadur Sapkota)

This paper attempts to fill the gap in the currently limited available empirical literature concerning the impacts of infrastructure on human development. This study assesses the impacts of several infrastructure variables (access to electricity, access to clean drinking water sources, and road density) on the human development index (HDI) and its three component indexes (i.e., health, education, and income) using the panel data of 1995 to 2010 covering 91 developing countries. The estimation resulted in revealing that all three infrastructure variables have significant positive impacts on HDI. Thus it goes on to argue that eradication of all forms of infrastructure poverty (defined as "lack of access to infrastructure services") is a necessary, if not sufficient, condition to eliminate human poverty sustainably.

Chapter 4: Realizing "Human Security" in the Post-2015 Era: Principles to Promote Inclusive Development and Resilience (Ryutaro Murotani)

The chapter starts with the premise that inclusive development and resilience are two key perspectives that were not sufficiently

captured in the current MDGs framework and that they should be incorporated into the post-2015 agenda. It argues that these two perspectives are interrelated, and that they can be integrated through the concept of human security, because those who are excluded from development progress tend to be more vulnerable to downside risks, and vise versa. The paper then argues that if the post-2015 development framework intends to make sure that no one is left behind, the human security concept must be its guiding principle. It considers some of the important implications that the concept offers: a people-centered perspective, a comprehensive approach in development, and context-specific, prevention-oriented policies that emphasize both protection and empowerment of the people.

Chapter 5: Inclusive Development: Definition and Principles for the Post-2015 Development Agenda (Eiji Kozuka)

This paper attempts to define the concept of inclusive development and discusses how it can be incorporated into the post-2015 development agenda. Employing the ideas formulated by modern egalitarian philosophers, such as Dworkin and Roemer, the paper defines inclusive development as development that enhances people's well-being through advancing equality of opportunity for all members of society, with particular attention to the poor, the vulnerable, and those disadvantaged groups normally excluded from the process of development. Based on this recognition, the paper then proposes that to advance inclusive development, greater focus must be placed on education, early childhood development, employment, and infrastructure.

Chapter 6: Analysis of Poverty between People with and without Disabilities in Nepal (Kamal Lamichhane, Damaru Ballabha Paudel and Diana Kartika)

More than two-thirds of the total population of people with disabilities live in low and middle income countries and comprise one of the poorest and most marginalized groups in society. However, due to the dearth of data, research on disabilities and poverty is rare. This paper intends to help fill this void by examining the factors related to the poverty of people with and without disabilities in Nepal, using a nationally representative

dataset, the Nepal Living Standard Survey (NLSS-2010/2011). Results show that poverty headcount, incidence and severity are higher among people with disabilities compared to their counterparts without disabilities, indicating that they are more vulnerable to falling into the poverty trap. One striking finding is that persons with disabilities receiving at least 10 years of schooling are found to be not poor, justifying the greater need for investment in the education of individuals with disabilities. This and other findings therefore suggest the importance of addressing the issue of persons with disabilities and other marginalized groups in development efforts to reduce poverty and to make development inclusive and sustainable.

Chapter 7: Resilience and Social Capital (Go Shimada)

This short paper discusses the concept of resilience. Recognizing that the term has been used in different contexts and with slightly different meanings, it proposes a resilience framework that defines resilience as the ability of social units (government, local administrations, organizations and communities) to mitigate and carry out recovery activities in ways that minimize social disruption.

Chapter 8: A Quantitative Study of Social Capital in the Tertiary Sector of Kobe: Has Social Capital Promoted Economic Reconstruction Since the Great Hanshin Awaji Earthquake? (Go Shimada)

This paper examines how social capital has worked in the process of recovery and reconstruction in Kobe, Japan, since the Great Hanshin Awaji Earthquake in 1995. The paper focuses on the tertiary sector of Kobe because, prior to earthquake, the sector accounted for 80% of employment, which is the most important factor for reconstruction in the mid- and long-term. Since the earthquake, there has been a structural shift from the secondary sector due to the damage caused by the earthquake. The paper proves that both bonding and bridging social capital are important factors for employment. This finding provides empirical evidence for the on-going debate on how to rebuild Tohoku.

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Part I

Global Development Footprint: Achievements and Remaining Challenges

Chapter 1
Achieving the Millennium Development Goals: Lessons for Post-2015 New Development Strategies

Jeet Bahadur Sapkota and Sakiko Shiratori

1. Introduction

The Millennium Development Goals (MDGs) are the most comprehensive and ambitious developmental framework with measurable indicators ever developed, endorsed and implemented globally, even though the MDGs framework has invited a lot of criticism (for details, see Fukuda-Parr 2010, Easterly 2009, and Saith 2006). Following the unanimously endorsed Millennium Declaration at the United Nations (UN) Millennium Summit in September 2000, 191 UN member states committed themselves to the achievement of the MDGs.

With the primary aim of reducing multidimensional poverty in developing countries, the MDGs include: (1) eradicating extreme income poverty and hunger; (2) achieving universal primary education; (3) promoting gender equality; (4) reducing child mortality; (5) improving maternal health; (6) combating HIV/AIDS, malaria and other diseases; (7) ensuring environmental sustainability; and (8) developing a global partnership for development. Twenty-one targets and 60 indicators were set to monitor the achievement of these eight goals.[1] The MDGs, using the baseline of 1990, set the deadline to meet these goals and targets for 2015.

The MDGs have drawn positive attention in general. According to Melamed (2012), their strengths reside in a) brevity, b) increased aid volumes, c) rationalization of aid, d) national level accountability, and e) improved data collection. The paradigm shift from the narrow focus of growth to multidimensional poverty was also a notable advancement. At the same time,

1. The official detailed list of the eight MDGs, respective targets and indicators is available at:http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm (accessed August 30, 2012).

the MDGs framework has its own weaknesses and has attracted criticism. Melamed (2012) summarizes the weaknesses as follows: a) Participation in the processes is lacking, b) Priorities are distorted, c) Inequalities are masked, d) Commitment from rich countries is lacking,e) Important issues such as climate change, disability and conflict are overlooked, and f) Global trends and goals are not translated into national policies.

Among the above weaknesses, inequality is the most frequently cited. Though the Millennium Declaration prioritized global solidarity and equality as its core values and principles (UN 2000, 2), it was not properly integrated in the MDGs framework. The achievement of MDGs at the global level has been a great success, but the poor progress in the most needy regions, countries, and groups indicates the urgency of a wholesale change of policy, oriented towards more inclusive development. Neither does the MDGs framework give enough attention to climate change, natural disasters, economic crises, armed conflicts, and disability, which most adversely affects the existing poor and has made many people fall below the poverty line for the first time.

In this paper, we want to emphasize the importance of "inclusiveness" and "resilience" for the post-2015 development framework. This paper will: (i) briefly examine the progress on MDGs at the global, regional, and national levels, (ii) evaluate the patterns of progress across countries, (iii) examine how the MDGs progress is hindered by several types of shock, and (iv) draw lessons for post-2015 development strategies. As the world is just two years away from the MDGs deadline, the dialogue on the post-2015 development framework is already intensifying in various corners. Now is the appropriate time to assess the MDGs progress and consider new policy options for a post-2015 development framework.

2. Progress towards the MDGs

This section presents the progress towards selected MDGs indicators at the global, regional and country levels. It also examines the relationship between initial levels of development and the speed of subsequent progress as well as the uneven development within a country. Considering the limited size of this paper, we highlight the overall patterns rather than discuss the progress of each country.[2]

2. These data and figures are available from JICA-RI upon request.

2.1 Data

Throughout the paper, figures from the World Bank's database of official indicators for monitoring progress toward MDGs are used unless otherwise specified. This database provides the most comprehensive and up-to-date data available on MDGs so far.[3] Both low income and middle income countries are included in this analysis. However, since data are incomplete in their coverage of indicators and countries, we restrict our analysis to 14 out of 60 indicators. All eight MDGs goals are still covered. We select the representative indicator(s) for each goal, taking data availability into account. Table 1 presents the selected indicators. The 14 indicators cover the three targets of MDG-1 and MDG-8, two targets of MDG-6 and MDG-7 and one target for each remaining MDG.

Table 1. Selected indicators

	Selected indicators	MDGs target No.	MDG indicator No.	Data availability*
1	Poverty headcount ratio at $1.25 a day (PPP) (% of population)	1A	1.1	108**
2	Employment to population ratio, 15+, total (%)	1B	1.5	123
3	Prevalence of undernourishment (% of population)***	1C	1.11	128
4	School enrollment, primary (% net)	2A	2.1	116
5	Ratio of girls to boys in primary and secondary education (%)	3A	3.1	128
6	Mortality rate, under-5 (per 1,000)	4A	4.1	142
7	Maternal mortality ratio (modeled estimate, per 100,000 live births)***	5A	5.1	125
8	Prevalence of HIV, total (% of population ages 15-49)	6A	6.1	105
9	Malaria cases reported (number of cases)	6C	6.6	94
10	Forest area (% of land area)	7A	7.1	142
11	Improved water source (% of population with access)	7C	7.8	138
12	Net ODA received (% of GNI)	8A	8.1	128
13	Goods (excluding arms) admitted free of tariffs from developing countries (% total merchandise imports excluding arms)	8A	8.6	133
14	Mobile cellular subscriptions (per 100 people)	8F	8.15	139

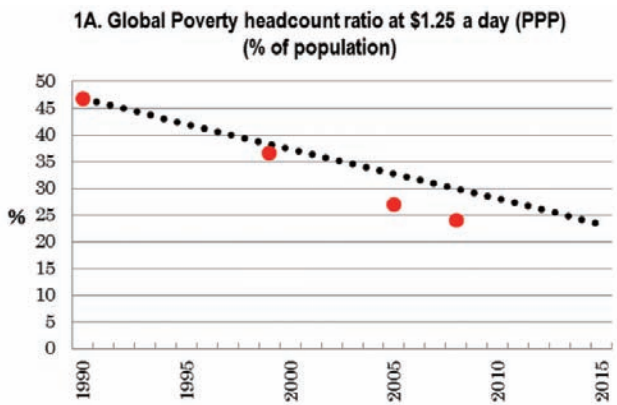
Note: *Number of countries which have data for the selected indicator; **19 countries have data only for a single year; *** The poor accuracy of these indicators could draw criticism; however, we use these because the data are widely available and there are no other better usable indicators. We suggest that the reader consider this fact when interpreting the results.

3. Although United Nations Statistics Division (UNSD) has compiled a web site on MDG indicators provided by many UN and other donor agencies (including the World Bank), the World Bank participates in the exchange of information and tries to maintain a dataset consistent with UNSD (http://go.worldbank.org/0R5V0MEQV0). Also, the World Bank updates the database more frequently than UNSD. The World Bank database has relatively more information and user-friendly features for statistical analysis than that of the UNSD dataset.

2.2 Global and regional trends

A simple method is followed to assess progress towards the MDGs targets. The trajectory is that required for each country, region and for the whole world to reach each MDGs goal by the 2015 deadline.[4] Then, deviations from the trajectory are examined. For instance, Figure 1 illustrates the global trend for the goal 1A (poverty reduction).[5] The dotted line indicates the linear progress towards the target, so the actual progress represented by the red dots are better positioned than that of the required tracks in this case. Each country and each region has their own unique trajectory due to their unique starting points. Comparing the actual historical path and the required path of a country or a region to meet the MDGs on time provides a simple method to assess the progress towards MDGs.

Figure 1. Global achievement towards poverty reduction (MDGs Goal 1A)



Source: Authors' calculations based on data from the World Bank's MDGs database are available at <http://databank.worldbank.org/Data/Views/VariableSelection/SelectVariables.aspx?source=Millennium%20Development%20Goals> (accessed July 5, 2012).

The data availability varies depending on region and country. Although the reference year for measuring progress is set at 1990, data for some indicators in some countries and regions are not available for 1990. In such cases, the earliest year after 1990 for which the data are available is used as a reference year. If the region or country has data for at least two years so that their actual progress trend can be examined, their data are

4. Aggregates are based on the World Bank. Because of missing data, aggregates should be treated as approximations of unknown totals or average values. (World Bank, http://data.worldbank.org/ about/data-overview/methodologies, accessed November 26, 2012)

5. For global progress of other selected indicators, see Appendix A.

included in this study. In this way, data and figures for 142 developing countries, six regions, and for the world are constructed.[6]

The global poverty headcount ratio at $1.25 per day fell from 46.7% in 1990 to 24% in 2008 (Figure 1). The World Bank and the IMF (2012) have estimated that the goal 1A has already been met. The progress, however, varies from region to region. In the case of 1A, East Asia and the Pacific, Europe and Central Asia, Middle East and North Africa met the target well ahead of the deadline, while Sub-Saharan Africa and South Asia are lagging behind, despite their impressive progress. For example, poverty fell from 56.5% to 47.5% in Sub-Saharan Africa and from 53.8% to 36% in South Asia from 1990 to 2008, respectively. The trend shows that South Asia could meet the target if they accelerate the current trend by a small amount, but Sub-Saharan Africa is unlikely to meet the target by 2015.[7]

Among the MDGs targets, the most detrimental situation is observed in MDG 1B (employment to population ratio, ages 15 years and older). It worsened from 62.2% in 1991 to 60.3% in 2010. Although the original target (achieving full employment by 2015) was unrealistically ambitious, increasing global unemployment is not only a great challenge for improving the wellbeing of the bottom population strata but also a serious threat to political stability. Latin America and the Caribbean made some progress from 56.6% in 1991 to 61.6% in 2010; however, the other regions either worsened or remained unchanged during the same period.

Halving hunger from 1990 to 2015 is another target (1C) of MDG 1. Measured by the "prevalence of undernourishment (% of population)," the hunger rate decreased from 16.4% in 1992 to 12.9% in 2010 at the global level. This target is also unlikely to be met by 2015. Increasing food prices at the global level since 2008 is the most cited reason for retarding progress on reducing hunger (World Bank and IMF 2012).

6. The list of countries included in each region is given in Appendix B. Due to limited space, regional progress for each indicator is not presented in this paper.

7. Readers should be careful on interpreting this analysis because Sub-Saharan Africa, South Asia, and many low- income countries have made impressive development progress, and only using the MDGs yardstick cannot provide a complete picture. See Easterly (2009) for why overall development progress should not be measured only in terms of MDGs and how the MDGs framework misleads the overall development progress of Africa. The MDGs themselves are global goals, not the regional or national ones. Thus, our purpose is to highlight the past and current position in terms of the targets of MDGs assuming we follow the same principles to set MDGs at regional and national levels.

Regionally, only East Asia and the Pacific is on track. Latin America and the Caribbean, and Sub-Saharan Africa have the potential to achieve the goal by 2015 if they can accelerate progress.

MDG 2 embarked on achieving universal primary education. Although the "net enrollment ratio in primary education" rose from 80% in 1991 to nearly 89% in 2010, the progress is not on track to achieving the target of 100% by 2015. Only Latin America and the Caribbean regions are on track. While East Asia and the Pacific, and Europe and Central Asia are close to meeting the target, South Asia and Sub-Saharan Africa will not meet the target with the current trend. MDG 3 advocates gender equality. One of the main targets, achieving gender parity in primary and secondary education (3A) measured by the "ratio of girls to boys in primary and secondary education (%)" is on track at the global level with the ratio changing from 87% in 1990 to 97% in 2010. However, Sub-Saharan Africa, Eastern Europe and Central Asia, the Middle East and North Africa are unlikely to meet the target by 2015.

The MDGs on maternal and child health are not likely to be achieved at the global level despite significant progress. For instance, "under-5 mortality rate (Target 4A)," which is targeted to be reduced by two-thirds, has declined from 90 to 58 per 1,000. Although most regions are on track, Sub-Saharan Africa and South Asia act as a brake. Likewise, the indicator of "maternal mortality ratio (5A)," which is targeted to be reduced by three quarters, has declined from 850 to 500 deaths per 100,000 live births. Latin America and the Caribbean together with Sub-Saharan Africa are seriously off-track to achieve the goal. Regarding other health-related targets, the Target 6A "prevalence of HIV (% of population)" rose sharply from 0.33% in 1990 to 1.4% in 2003, then gradually started to decline and reached 0.8% in 2010. Although there is no measurable goal on this indicator, its vision of "halting and reversing the spread of HIV/AIDS by 2015" seems to be on track. The prevalence of HIV/AIDS in Sub-Saharan Africa and South Asia is already declining. The data for "malaria cases reported (6C)" are not available at global and regional levels.[8]

MDG 7 strives to ensure environmental sustainability. The non-numerical goal in Target 7A is to "integrate the principles of sustainable

8. According to the World Bank and IMF (2012, 22), there are 300 million to 500 million cases of malaria each year, leading to more than one million deaths. Nearly all the cases occur in Sub-Saharan Africa, and most deaths from malaria are among children younger than five.

development into country policies and programs and reverse the loss of environmental resources." As a proxy, "the proportion of land area covered by forest" is used to monitor the progress in this study. Forested areas have decreased slightly from 32% in 1990 to 31% in 2010. Regionally, Middle East and North Africa, East Asia and the Pacific, Europe and Central Asia have successfully increased their forested areas. One of the targets, 7C, "halving the proportion of people without safe drinking water," was already achieved in 2010, which was more than halved from 24% in 1990 to 11.6% in 2010 at the global level. Only Sub-Saharan Africa, the Middle East and North Africa could not make the required progress on this goal.

The eighth goal "develop a global partnership for development" bears distinctive values to develop a mechanism to achieve all the MDGs. The relative importance of the Official Development Assistance (ODA) in the national economy declined over the period of 1990 to 2000 and partly recovered after that. For instance, the ratio of net ODA receipts to the gross national income (GNI) declined from 0.27 in 1990 to 0.15 in 2000 and increased to 0.21 in 2010. East Asia and the Pacific, Latin America and the Caribbean experienced continuous decline. Market access measured by "Goods admitted free of tariffs from developing countries" made encouraging progress from 54% in 1996 to 79% in 2010. All regions gained more market access over the period. Another target, "make the benefits of new technologies available, especially information and communications (8F)," measured by mobile cellular subscribers made tremendous progress from 0.3 to 78 per 100 people with mobile cellular phones. All regions showed a similar dramatic increase at around the start of the millennium.

2.3 Patterns of progress across countries

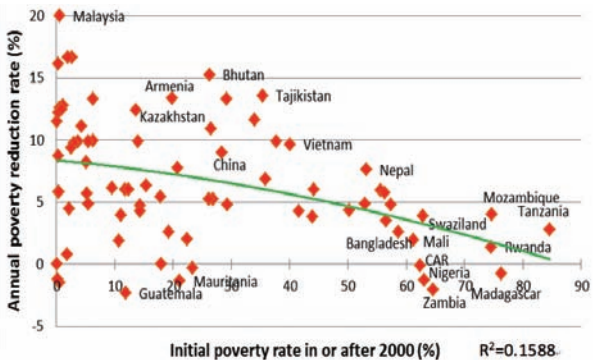
2.3.1 Initial status and progress

This subsection will examine the relationship between the initial level and subsequent progress rate and is investigated in order to find any characteristic patterns. Figure 2 shows the relationship between the poverty headcount and its annual reduction rate.[9] The year 2000, when the MDGs were endorsed by the UN General Assembly, is set as the initial year. Scatter plots present the poverty rate at the initial level on the

9. For other indicators, see Appendix C.

horizontal axis and the average annual progress rate on the vertical axis. The polynomial trend line indicates the overall downward trend of the relationship. This declining slope implies that average annual poverty reduction rates are lower in the countries with a higher initial level of poverty.[10] Though it is admittedly hard to gain a better progress rate from the initially poorer countries as they have a large denominator for the calculation of the progress rate, global compacts like MDGs will be better legitimized if they can mobilize greater support for poorer countries.

Figure 2. Scatter plot of annual poverty reduction rate and its initial level, 2000-2010



Source: Authors' calculations based on data from the World Bank's MDGs database.

Progress towards the employment target set in MDG 1B is of most concern. Most of the countries stagnated on the MDG 1B, and no country is likely to meet the employment target (Appendix C-2). Progress toward the reduction of the undernourished population (1C) reveals that only a few countries have made significant progress; most have made slow progress and some countries which had had a low initial undernourished population even saw an increase in the undernourished population (Appendix C-3).

The level of net primary school enrollment (2A) shows impressive progress in general. Countries with lower initial levels of primary school enrollment achieved greater rates of progress (Appendix C-4). Many countries have successfully improved the girl to boy ratio in primary and secondary school enrollment (3A), and have already fulfilled the gender parity target (Appendix C-5). This indicates that most of the countries will

10. Note that the relationship is not so strong in this case (R2=0.16).

meet the MDGs concerning education and gender parity.

Progress on the under-5 mortality rate (4A) and maternal mortality ratio (5A) are impressive, but still many countries are far from achieving their respective targets (Appendix C-6, C-7). Haiti recorded a notable increase of its under-5 mortality rate in 2010 due to the earthquake. Though the slightly downward slope of the trend line of the under-5 mortality rate indicates that countries which were initially lagging behind have a slightly lower rate of progress, the relationship is very weak. In the case of maternal mortality ratio, no specific patterns are discernible. When seen regionally, it becomes clear that some countries, especially in Sub-Saharan Africa, have experienced a deterioration. Regarding maternal and child health, the progress seems to depend on the regional or country-specific situation rather than the initial status.[11]

The prevalence of HIV (6A) and Malaria (6C) are not evenly distributed throughout regions. Though the diseases began to decrease at the global level (UN 2012), when it comes to Sub-Saharan Africa, many countries have experienced a drastic increase (Appendix C-8, C-9).

No specific trend is discernible in the forested areas (Appendix C-10). The target of halving the proportion of people without sustainable access to safe drinking water (7C) has already been met by most countries (Appendix C-11). A higher rate of progress on water access is demonstrated by countries with lower initial access. With regard to the target on ODA receipt (8A), the countries which had a lower level of ODA initially experienced a higher growth rate of net ODA receipt (Appendix C-12). Progress on market access (8A) and mobile cellular subscriptions (8F) was rapid during the last decade especially in poorer countries (Appendix C-13, C-14), which reduced the gaps between LICs and MICs on market access, global connection and the penetration of advanced technology.

Overall, there are three different patterns of progress. The first is one in which the initial gap between good and bad performers has been reduced. School enrollment, gender parity in education, water access, and market access show this pattern. The second pattern is one in which the gap has been expanded. Such a pattern has been observed in poverty headcount, and under-5 mortality rate. To correct the deficiency, specific

11. See Section 3 for further discussion.

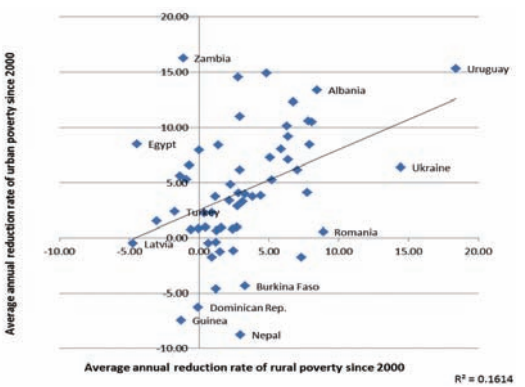
support from the international community is required.[12] The third pattern is observed in maternal mortality ratio and forested areas in which there is no noticeable change.

2.3.2 Poverty reduction and within-country inequality

In this section, relationships between overall progress on poverty reduction and within-country inequality are explored by comparison between rural and urban income and the Gini index.

Figure 3 shows the comparison between the average annual reduction rate of rural and urban poverty. The patterns of progress towards rural and urban poverty reduction clearly show a wide disparity between countries. Most of the countries made progress on both rural and urban poverty reduction. However, some countries have shown an unbalanced pattern of urban and rural poverty reduction. For example, while Egypt and Zambia reduced their urban poverty at the rate of 8.5% and 16.3%, respectively, they experienced increase in rural poverty at the rate of 4.5% and 1.1%, respectively. In some countries such as Nepal and Burkina Faso, the urban poverty rate increased during the same period while the rural poverty rate decreased. Overall, the majority of countries experienced a higher rate of poverty reduction in urban areas than in rural areas. This may imply that rural poverty needs to be attended to more seriously.

Figure 3. Rural versus urban poverty reduction rate, 2000-2010

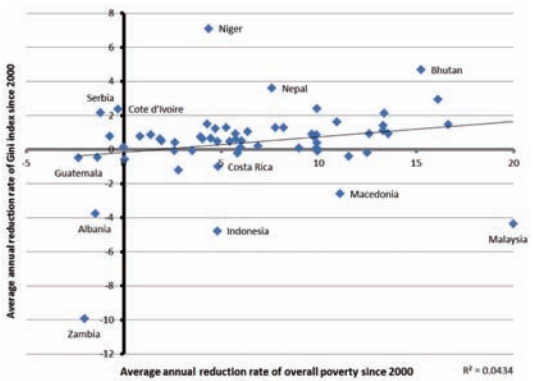


Source: Authors' calculations based on the data from the World Bank's MDGs database.

12. It seems that not only the initial status but also shocks or specific situations seem to have an effect on some indicators; e.g., the earthquake in Haiti has an effect on the under-5 mortality rate. We will see factors other than the initial status in Chapter 3.

Figure 4 plots the average annual reduction rates of poverty and inequality measured by the Gini index from 2000 to 2010. The majority of countries were able to reduce poverty and inequality simultaneously. However, the Gini index increased for some countries, even though their poverty rate decreased. Malaysia, Macedonia, Costa Rica, and Indonesia are among the countries that belong to this category. Similarly, a few countries (such as Albania, Zambia, and Guatemala) experienced a simultaneous decrease in poverty and inequality. These facts indicate that poverty reduction does not always result in an equal society. Therefore, internal and cross-country inequality should be separately addressed in the post-2015 development framework.

Figure 4. Annual reduction rates of overall poverty and Gini index, 2000-2010



Source: Authors' calculations based on the data from the World Bank's MDGs database.

2.3.3 MDGs performance of low-income countries and fragile states

Many countries in sub-Saharan Africa, low-income countries (LICs), and fragile states are far behind the MDGs targets due to the combination of low starting points and difficult circumstances (Easterly 2009, Clemens et al. 2007, World Bank and IMF 2012). The MDGs progress at the global level is allegedly driven by the large and middle-income countries (UN 2012). For example, the poverty headcount ratio declined remarkably in China, where nearly 20% of the world's population lives, from 60% in 1990 to 14% in 2008. The poverty rate of developing regions excluding China was reduced from 41% to 28%, whereas the decline is from 47% to 24% if China is included (UN 2012). In this way, real MDGs achievement of LICs or fragile states may be hidden behind the achievement of a few large countries. The progress of these countries is an important aspect to

explore.[13]

Table 2 presents the list of LICs that have already achieved or are on-track to achieve the selected MDGs targets.[14] The LICs seem to be lagging far behind in achieving the MDGs. For instance, out of 36 LICs, only three have already achieved the poverty target and another two are on track. Only Mali and Niger have already achieved their targets, and the other eight LICs are on-track for the hunger target. Three LICs have already achieved the universal primary education target and seven LICs are on-track to achieve it.

Table 2. MDGs performance of Low-Income Countries (out of 36 LICs)

Selected MDGs targets (indicators)	Already achieved the targets	On-track to achieve the targets
1A (1.1): *Poverty headcount ratio at $1.25 a day (PPP) (% of population)*	Cambodia, Kenya, Mauritania	Central African Rep., Ethiopia
1B (1.5): *Employment to population ratio, 15+, total (%)*	None	None
1C (1.11): *Prevalence of undernourishment (% of population)*	Mali, Niger	Bangladesh, Benin, Burkina Faso, Cambodia, Chad, Ethiopia, Kyrgyz Rep., Mozambique
2A (2.1): *School enrollment, primary (% net)*	Myanmar, Tajikistan, Tanzania	Bangladesh, Benin, Cambodia, Ethiopia, Mozambique, Nepal, Rwanda
3A (3.1): *Ratio of girls to boys in primary and secondary education (%)*	Bangladesh, Gambia, Haiti, Kenya, Kyrgyz Rep., Madagascar, Malawi Myanmar, Rwanda, Tanzania, Uganda, Zimbabwe	Benin, Burkina Faso, Burundi, Cambodia, Comoros, Ethiopia, Guinea, Mauritania, Nepal, Sierra Leone, Togo
4A (4.1): *Under-5 mortality (per 1,000)*	Bangladesh	Eritrea, Madagascar, Nepal

13. The list of low-income countries and fragile states analyzed in this paper is summarized in Appendix D.

14. Only clearly defined targets are included in this table.

5A (5.1): *Maternal mortality ratio (modeled estimate, per 100,000 live births)*	None	Bangladesh, Eritrea, Nepal
7C (7.8): *Improved water source (% of population without access)*	Afghanistan, Burkina Faso, Comoros, Gambia, Demo. Rep. of Korea, Kyrgyz Rep., Malawi, Nepal	Benin, Cambodia, Guinea, Uganda

Source: Authors' calculations based on data from the World Bank's MDGs database.

Progress on gender parity in education is most noticeable. Twelve LICs have already achieved the target while 11 additional LICs are on track. LICs are performing relatively well on achieving the target of access to safe drinking water, as eight LICs have already achieved the target and four others are on track. However, LICs are having trouble to achieve health-related MDGs (4A and 5A); no country except Bangladesh has achieved these targets, while only three LICs are on-track to achieve them. What is noteworthy is the fact that these LICs had particularly high initial levels of under-5 mortality rates and maternal mortality ratios. Overall, most of the LICs are unlikely to achieve most of the MDGs targets.

LICs that have not achieved or are not on track for any of the MDGs targets listed above are the Congo Dem. Rep., Guinea-Bissau, Liberia, and Somalia. The LICs that have achieved or are on track for only one MDG target listed above are Afghanistan, Burundi, the Central African Rep., Chad, Haiti, The Dem. Rep. of Korea, Mali, Niger, Sierra Leone, Tajikistan, Togo and Zimbabwe. Out of these 16 LICs, 15, except Mali, are categorized as "fragile states" by the OECD (OECD 2011).[15] The lack of progress is most acute in these fragile states.

3. MDGs progress, risks and resilience

As seen above, progress in MDGs has been diverse across countries. Unfortunately, the above analysis based on the data of MDGs achievements can only elucidate chronic conditions that cause the diversity. In practice, the MDGs progress is critically hindered by shocks and crises such as sociopolitical conflicts (UN 2012), natural disasters (Mitchell 2012), economic crises (national, regional or global), and many

15. See Appendix D for definition.

other events that bring greater risks to the bottom layers of society (UN 2011). These external shocks are not well integrated in the current MDGs framework.

The MDGs data show that no fragile or low income countries affected by armed conflict have achieved a single MDG (World Bank 2011). In addition, millions of people around the world fell into poverty in the aftermath of natural disasters (such as floods, tsunami and earthquakes) and economic crises such as the 2000-2001 Turkish financial crisis (Cline 2002), the 1997 Asian financial crisis (Fallon and Lucas 2002), the 2008-2009 global economic crisis and the 2008 global food crisis (UN 2011). These conflicts and crises bring not only life-threatening challenges to the population of the affected areas, but also reverse the cycle of poverty reduction as poor people generally live in risk-prone areas. Hence, it is a formidable challenge, needing urgent development of a better national, regional and global framework for creating resilient societies that can readily cope with such risks and will ultimately lead to sustainable poverty and inequality reductions. Post-2015 development strategies should therefore give due priority to the building of resilient societies and address the following three broad areas of risk ranging from community to the global level.

First, armed conflict has always been a main challenge to the security and welfare of the people. While interstate conflict was dominant until the 20th century, intrastate conflict has become more prominent in recent decades. In fact, nearly 1.5 billion people live in countries that are affected by fragility, conflict, or large-scale organized criminal violence (World Bank 2011). Domestic violent conflict is concentrated on poorer countries and regions where the poverty headcount ratio is generally much higher than others (World Bank 2011). In terms of the MDGs progress, conflict-affected countries are more undernourished, have poorer access to education and health facilities and higher rates of child and maternal mortality than other developing countries. Looked at from a different angle, these countries have enormous potential for rapid development and MDGs achievement. For instance, the data show that undernourishment in Rwanda decreased from 56% in 1997 to 40% in 2005, and primary school completion rates in Mozambique increased from 14% in 1999 to 46% in 2007. Paying special attention to the conflict-related risks and those who are affected is worthwhile in designing a development framework for the post-2015 period.

Second, the grave and widespread impact of natural disasters demand strategies for building resilient societies. UNISDR (2012) estimated that disasters associated with natural hazards have affected 4.4 billion people, caused $2 trillion of damage and killed 1.3 million people since the first Rio summit in 1992. The impacts from any disaster are wide ranging: from loss of life to injury; from destruction and damage of property to loss of services; from social and economic disruption to environmental degradation. Such impacts mostly affect the poor and vulnerable population since they often live on marginal lands and in poorly constructed houses, and often have poor access to water and sanitation (World Bank 2006). The World Bank (2006) estimates that about 97% of disaster-related deaths reported globally occurred in developing countries. The World Bank (2000) also estimates that 80, 60 and 50% of the poor in Latin America, Asia, and Africa, respectively, live on marginal lands. Disasters can worsen poverty, especially among those living near the poverty line, and trap families in chronic poverty who are already poor (World Bank 2000). Disaster resilience should receive due priority.

Third, because of rapid globalization, financial and economic shocks have become prominent in the last two decades. The report on the Global Social Situation 2011 of the United Nations estimates that due to the global financial crisis that started in 2007, global unemployment rose sharply from 178 million in 2007 to 205 million in 2009, and between 47 million and 84 million more people fell into or remained trapped in extreme poverty (UN 2011). The food and fuel price hike which occurred immediately before the global economic crisis has ultimately increased the number of people living in hunger throughout the world to the record of over a billion in 2009 (FAO 2009). Whatever the causes of a crisis are, the poor are affected more adversely through the labor market such as layoffs, reduced work hours and wages and increased competition for jobs; through price shocks, such as increased food and energy prices; and through reduced remittance, return of migrants and reduced demand for jobs abroad (Turk, Mason, and Petesch 2010).

When these risks come together, it is extremely difficult to cope with the situation. Showing the nexus between natural disasters, conflict and fragility, Harris et al. (2013) provided a comprehensive assessment, and urged for further exploration of and attention to the interconnected shocks and stresses. On the other hand, we also notice that MDGs

achievements of countries such as Nepal and Ethiopia are impressive despite their devastating experiences with armed conflict in the past.[16] Further research on various case countries will be recommended to find effective policies and proper methods to integrate resilience into the post-2015 development strategy.

4. Lessons learned

The MDGs framework has been a center of development discourse and practice and has exerted enormous influence on international development policy. Focusing objectively on the achievement of a wide range of unmet human needs, the MDGs successfully shifted the development paradigm from a mere focus on economic development to multidimensional poverty. However, as progress towards the MDGs is uneven across countries and regions, and even within countries, there is still plenty of room for improvement. Lessons learned from the MDGs experience and from stakeholders' voices and opinions will help improve the development framework beyond the 2015 deadline.

First, we should recognize that there is a noticeable difference in the progress towards the goals. The goal of halving the poverty level and halving the population without improved water access are already met, and the progress toward gender parity in school education is also on track. However, the other targets are unlikely to be achieved by 2015 if the current trend continues. For one thing, the goal such as full employment was unrealistic from the beginning. Moreover, even when the goal was set realistically, a well-designed supporting mechanism for monitoring and following-up was frequently lacking. To achieve any developmental end, means such as a sound monitoring framework with a minimum set of common measurable indicators should be developed.

Second, the issue of inequality, which the MDGs framework fails to address properly, should be considered more seriously in the future. If we compare the achievement trends across regions and nations, the wide disparity undermines the positive image of the global achievement. Focusing merely on global progress can easily hide slower

16. For instance, despite a decade-long armed conflict from 1996 to 2006, Nepal reduced its absolute poverty from 68.0% in 1996 to 24.8% in 2010, which met the MDGs poverty reduction goal well ahead of the deadline. Similarly, despite the series of long conflicts with Eritrea and Somalia, Ethiopia reduced poverty from 60.5% in 1995 to 39.0% in 2005, and is on track to achieve the poverty reduction goal by 2015.

progress and growing disparities among a specific group of the population. Growing inequality and social exclusion could create sociopolitical tensions and hamper sustainable growth. We suggest two ways to address inequality in the post-2015 development agenda. One is to introduce appropriate inequality indicators and to have them reported regularly. Further studies, particularly country case studies, are required to develop or find appropriate indicators. The other is to monitor the indicators for different groups of the population. The residents should be disaggregated as much as possible by sex, wealth quintiles, and urban/rural residence, race and ethnicity.

Third, developing countries generally lack enough resources and institutions for social protection to support the existing and newly emerging poor, especially on sudden shocks and crises (McCord 2010). Although the MDGs database provides little information on conflicts and crises, many studies discussed in the previous section demonstrate the significant breadth and severity of the risks associated with armed conflicts, natural disasters, and financial or other kinds of crises for poor and vulnerable people. These risks indicate an urgent need to develop social resilience through the establishment of a local, regional and global framework for social protection.

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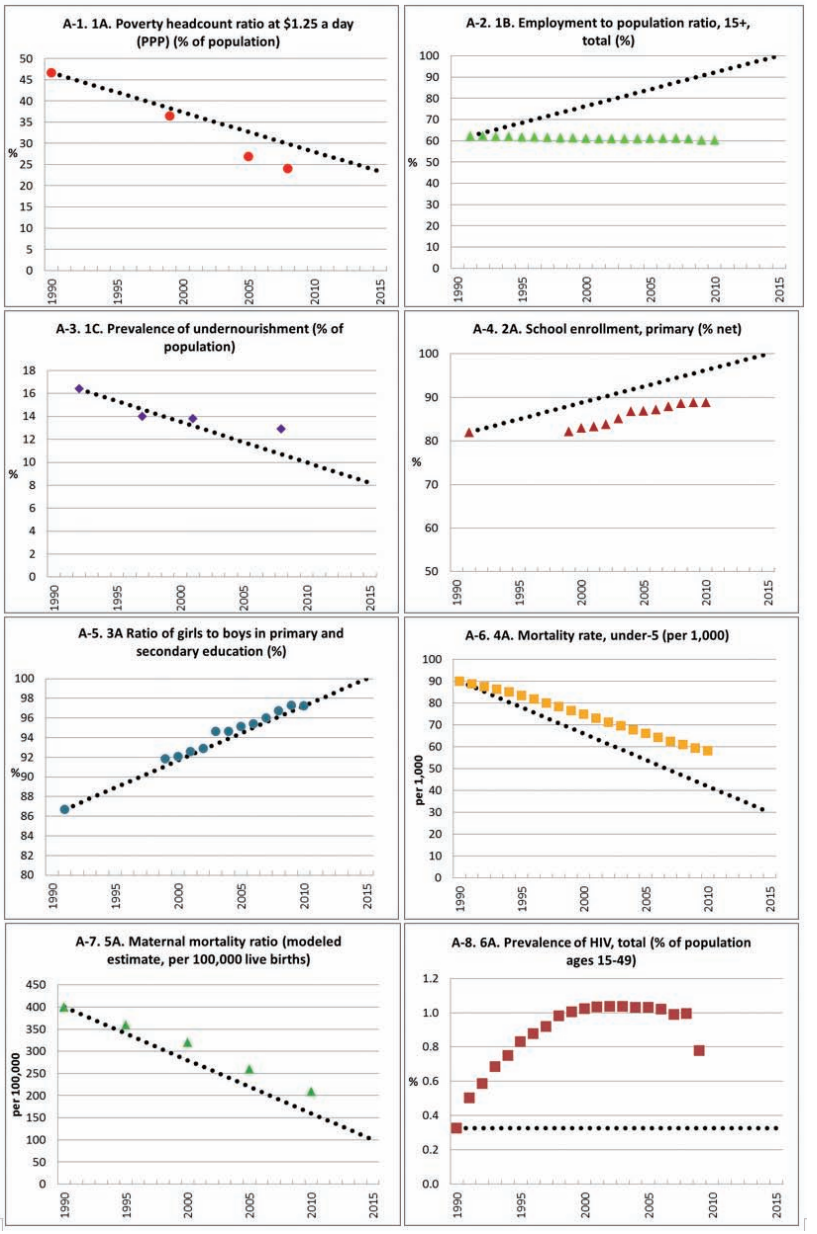
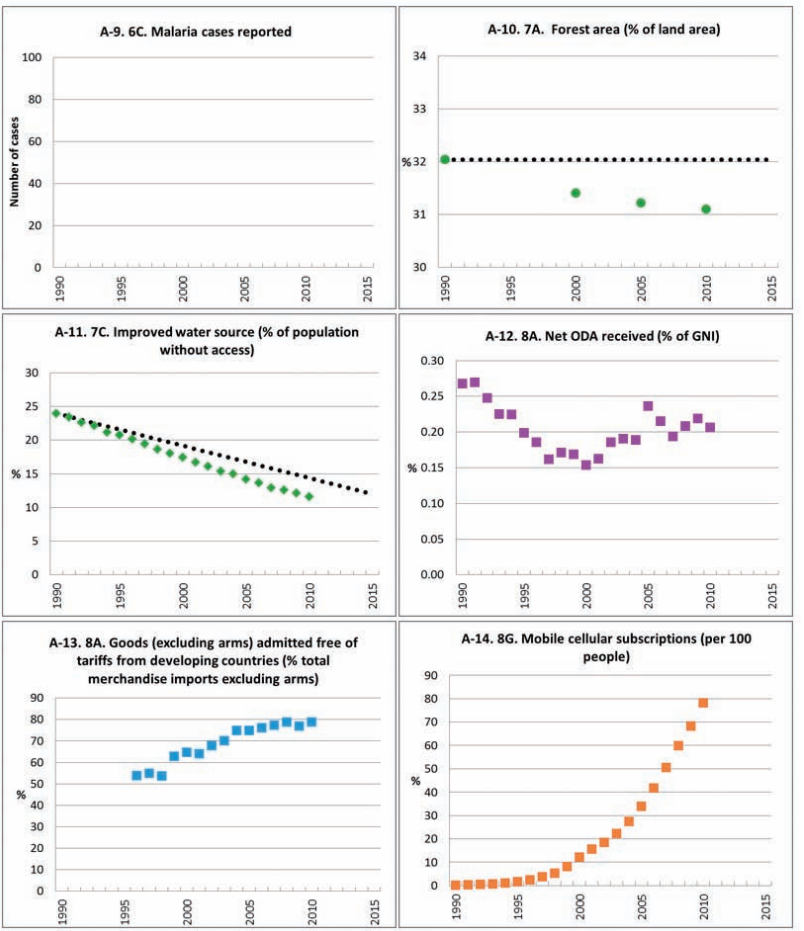
Appendix A: Global achievement towards selected MDGs indicators, 1990-2010





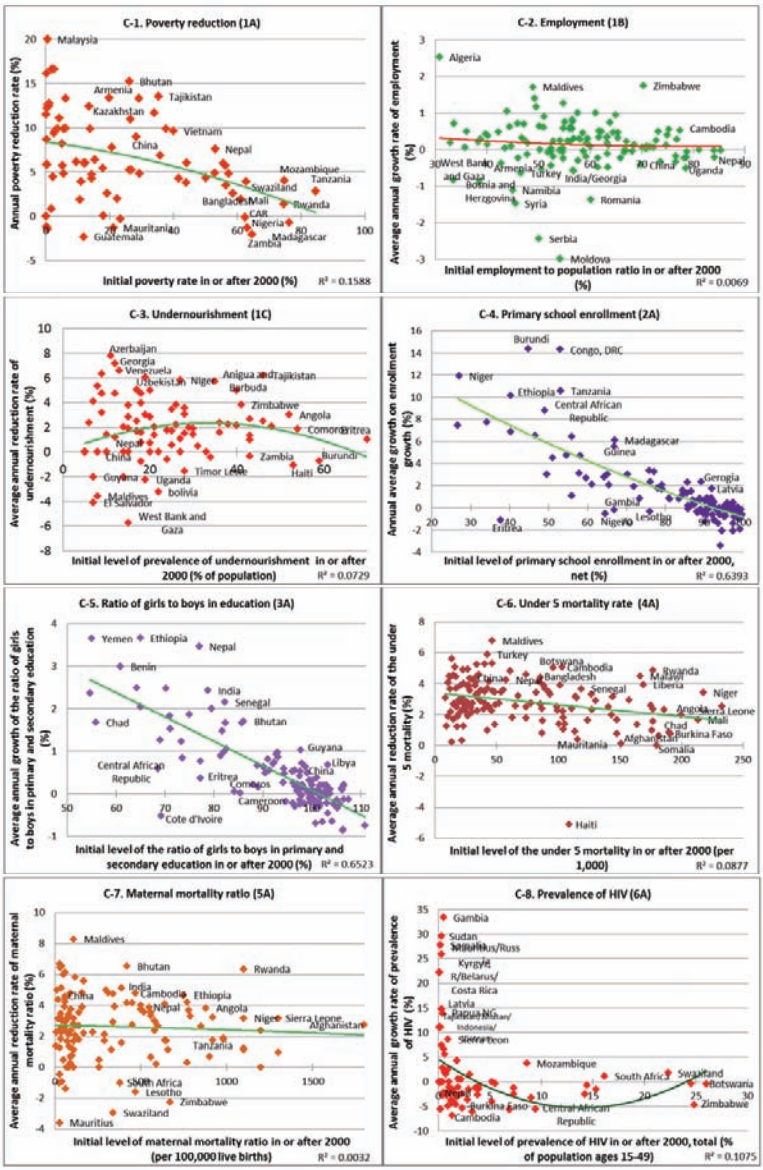
Source: Data for the MDGs No. 1A to No. 7C, 8A (net ODA received) and 8G (mobile cellular subscriptions) are taken from the World Bank's MDGs database; and the data for market access or MDGs No. 8A (goods (excluding arms) admitted free of tariffs from developing countries to developed countries) are taken from the online database, namely MDGs Goal 8: Market Access Indicators jointly created by the ITC, UNCTAD and WTO. The data are available at:
<http://databank.worldbank.org/Data/Views/VariableSelection/SelectVariables.aspx?source=Millennium%20Development%20Goals> and <http://www.mdg-trade.org/Index.aspx> (accessed June 26, 2012).
Note: Black dotted lines show the MDGs target; if the MDGs targets are not defined by the MDGs, no dotted line is drawn; points indicate the real situation in respective years; if the data for 1990 is not available, the base year for calculating the MDGs targets is the earliest year after 1990 for which data is available. Data on "Malaria cases reported (6C)" were not available for the world.

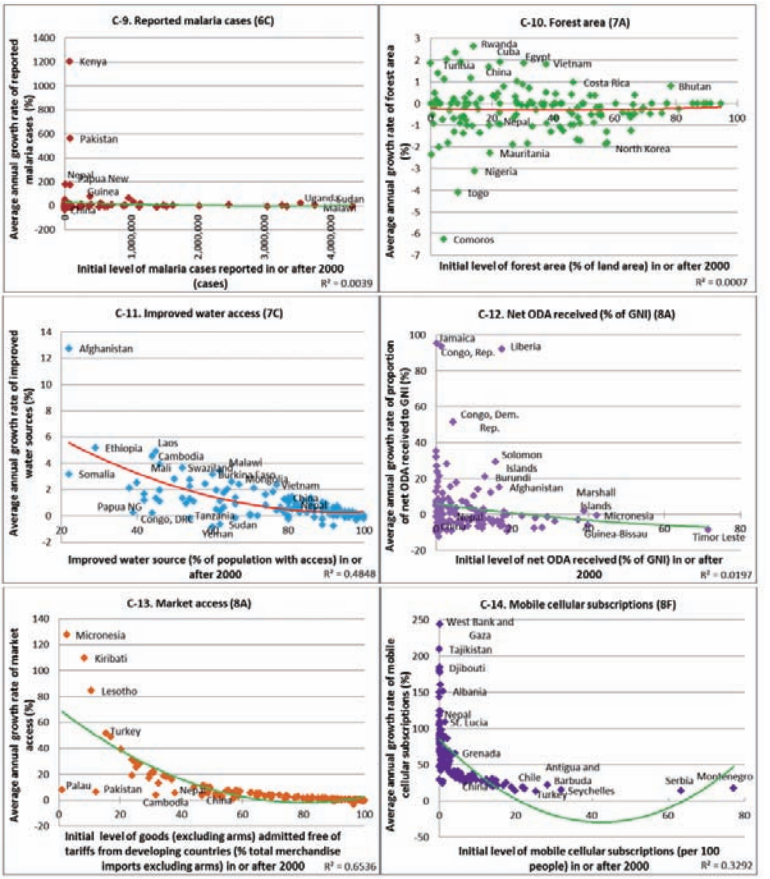
Appendix B: Countries included in the MDGs progress assessment by region

1. East Asia and the Pacific				
	Cambodia	Lao PDR	Palau	Timor-Leste
	China	Malaysia	Papua NG	Tonga
	Fiji	Marshall Islands	Philippines	Tuvalu
	Indonesia	Micronesia	Samoa	Vanuatu
	Kiribati	Mongolia	Solomon Islands	Vietnam
	Korea, Dem. Rep.	Myanmar	Thailand	
2. Europe and Central Asia				
	Albania	Georgia	Moldova	Turkey
	Armenia	Kazakhstan	Montenegro	Turkmenistan
	Azerbaijan	Kyrgyz Republic	Romania	Ukraine
	Belarus	Latvia	Russian Fed.	Uzbekistan
	Bosnia and Herzegovina	Lithuania	Serbia	
	Bulgaria	Macedonia, FYR	Tajikistan	
3. Latin America and Caribbean				
	Antigua and Barbuda	Cuba	Haiti	St. Kitts and Nevis
	Argentina	Dominica	Honduras	St. Lucia
	Belize	Dominican Rep.	Jamaica	St. Vincent and the Grenadines
	Bolivia	Ecuador	Mexico	Suriname
	Brazil	El Salvador	Nicaragua	Uruguay
	Chile	Grenada	Panama	Venezuela, RB
	Colombia	Guatemala	Paraguay	
	Costa Rica	Guyana	Peru	
4. Middle East and North Africa				
	Algeria	Iraq	Morocco	Yemen, Rep.
	Djibouti	Jordan	Syrian Arab Republic	
	Egypt, Arab Rep.	Lebanon	Tunisia	
	Iran, Islamic Rep.	Libya	West Bank and Gaza	
5. South Asia				
	Afghanistan	Bhutan	Maldives	Pakistan
	Bangladesh	India	Nepal	Sri Lanka
6. Sub-Saharan Africa				
	Angola	Côte d'Ivoire	Malawi	Sierra Leone
	Benin	Eritrea	Mali	Somalia
	Botswana	Ethiopia	Mauritania	South Africa
	Burkina Faso	Gabon	Mauritius	Sudan
	Burundi	Gambia	Mayotte	Swaziland
	Cameroon	Ghana	Mozambique	Tanzania
	Cape Verde	Guinea	Namibia	Togo
	Central African Rep.	Guinea-Bissau	Niger	Uganda
	Chad	Kenya	Nigeria	Zambia
	Comoros	Lesotho	Rwanda	Zimbabwe
	Congo, Dem. Rep.	Liberia	São Tomé and Principe	
	Congo, Rep.	Madagascar	Seychelles	

Source: The authors
Note: The regional grouping is based on the World Bank

Appendix C: Initial status and progress rate of selected MDGs across countries, 2000-2010





Source: Authors' calculations based on data from the World Bank's MDGs database.
Note: Only some countries are labeled in the graph

Appendix D: List of fragile states and Low-Income Countries (LICs)

Fragile and LICs (26 Countries)

Afghanistan	Ethiopia	Nepal
Bangladesh	Guinea	Niger
Burkina Faso	Guinea-Bissau	Sierra Leone
Burundi	Haiti	Somalia
Central African Republic	Kenya	Tajikistan
Chad	Korea, Dem. Rep.	Togo
Comoros	Liberia	Uganda
Congo, Dem. Rep.	Malawi	Zimbabwe
Eritrea	Myanmar	

Fragile but not LICs (19 Countries)

Angola	Lebanon	Sri Lanka
Cameroon	Nigeria	Sudan
Congo, Rep.	Pakistan	Timor-Leste
Cote d'Ivoire	Palestinian Adm. Areas	Uzbekistan
Georgia	Papua New Guinea	Yemen
Iraq	Sao Tome and Principe	
Kiribati	Solomon Islands	

LICs but not Fragile (10 Countries)

Benin	Madagascar	Rwanda
Cambodia	Mali	Tanzania
Gambia, The	Mauritania	
Kyrgyz Republic	Mozambique	

Source:
LICs) The World Bank has a tradition of grouping countries in different criteria, such as per capita income. The current groupings can be accessed at: http://data.worldbank.org/about/country-classifications/ country-and-lending-groups (accessed September 26, 2012).

Fragile States) The list of 45 countries in fragile situations is a compilation of two lists: the 2009 Harmonized List of Fragile Situations (World Bank, African Development Bank, Asian Development Bank) and the 2009 Fund for Peace Failed States Index ("alert" and "warning" categories). It is worth noting that not all fragile states are low-income countries: 19 of the countries considered fragile in 2009 were middle-income countries.

Chapter 2
The "Fragile States" Agenda in the Post-2015 Development Framework: Significance and Caveats

Ryutaro Murotani

1. Introduction

The achievement of the Millennium Development Goals (MDGs) remains painfully slow in fragile states. This is a widely noted observation from MDG progress monitoring and has been recognized as an important lesson for designing the post-2015 development framework. As Sapkota and Shiratori (2013, 16) have pointed out, fragile states[1] comprise all of the four low-income countries that are currently not on track for any of the MDGs targets and all but one of the 12 low-income countries that have achieved or are on track for only one MDG target. World Bank (2011) has estimated that no fragile or low-income countries affected by armed conflict[2] have achieved a single MDG. Clearly, accelerating development progress in these countries is necessary to further reduce and eradicate poverty in the post-2015 era.

However, to fully illustrate why they are slow in achieving MDGs and how these countries and the international community as a whole can enhance their development, a more careful understanding of the nature of fragile states is necessary. This chapter aims to examine various definitions and conceptions of what is now commonly referred to as "fragile states" and to identify challenges as well as some hidden issues behind the concept, thus suggesting some ways to incorporate these key perspectives into the post-2015 development framework.

2. "Fragile states" and achievement of MDGs

As it is widely recognized that the most fragile and conflict-affected

1. Fragile states as defined in the OECD's list from their 2011 report (OECD 2011).
2. World Bank classifies the countries with CPIA lower than 3.2 as fragile states. Conflict here is defined based on the Uppsala Conflict Database Programme dataset for 1991-2008.

countries are likely to achieve few or indeed none of the MDGs, the fragile states agenda is one of the central issues in discussions on the achievement of MDGs and the designing of the post-2015 development agenda framework. People in so-called "fragile states" have also been active in advocating that their special circumstances be incorporated into the global development agenda. Leaders of the 18 self-nominated fragile states[3] have created a group called 'g7+', which contributed to the creation of the "New Deal" agreement at the Busan High Level Forum in 2011. Nations in the g7+ group promote the establishment of the Peacebuilding and Statebuilding Goals (PSGs) that help them monitor their progress towards peace and development. Their assertion of the difficulties of fragile states in achieving the MDGs has received a regular attention. This chapter aims to summarize how fragile states are lagging behind in achieving the MDG targets, and to critically review the usefulness of the fragile states concept in discussions for the post-2015 development framework.

Variations in the definitions and classifications of "fragile states"

Despite widespread usage of the term, there is no consensus on the definition or classification of "fragile states". According to the Organisation for Economic Co-operation and Development (OECD) (2007a) definition, "states are fragile when state structures lack political will and/or capacity to provide the basic functions needed for poverty reduction, development and to safeguard the security and human rights of their population". Development assistance agencies and donors such as DFID, USAID, European Commission, German BMZ, AusAID, Asian Development Bank, have published their policy papers or strategies on fragile states, using their own definitions respectively. Researchers also suggested various definitions, depending on their concerns over these countries (e.g. Stewart and Brown 2009; Putzel and Di John 2012). However, so far, as the broadest definition with close-to-consensus agreement in the OECD, the OECD definition is the most often cited and is becoming a widely recognized definition of the term.

The methods for categorizing fragile states are also diverse, with the

3. The 18 member states are Afghanistan, Burundi, Central African Republic, Chad, Comoros, Cote d'Ivoire, Democratic Republic of the Congo, Guinea, Guinea Bissau, Haiti, Liberia, Papua New Guinea, Sierra Leone, Solomon Islands, Somalia, South Sudan, Timor-Leste, and Togo. For details of the g7+, please see <http://www.g7plus.org/ >.

classification depending on the analysis and organization. World Bank classifies countries using the "Country Policy and Institutional Assessment" (CPIA), with scores of lower than 3.2 regarded as fragile states. Other organizations such as the Fund for Peace (Failed States Index), Carlton University (Country Indicators for Foreign Policy), and the Brookings Institution (Index of State Weakness) have attempted to create their own indices[4], reflecting factors they consider important for the stability of countries. OECD as an international organization does not create its own classification, but it combines several indicators to identify the fragile states for their own statistical purposes. OECD (2011) used the 2009 Harmonized List of Fragile Situations by the World Bank, African Development Bank, and Asian Development Bank and the 2009 Failed States Index by the Fund for Peace for its 2011 list. The 2010 list is based on CPIA by the World Bank, Index of State Weakness by the Brookings Institute, and the Country Indicators for Foreign Policy (CIFP) by the Carlton University (OECD 2010).

In addition to the lack of agreement on the country classification system at any given time, fragile state status can also change over time. Some countries move in and out of fragility, while others retain fragile state status for many years. In the five reports published by OECD (2007b, 2008a, 2010, 2011, 2012), 61 countries and areas have been listed as a fragile state at least once. However, less than half (27 countries) have appeared on the list in all the five reports. This variation over time can make the statistical analysis even more complicated.

In spite of such inconsistency on definitions and classifications of 'fragile states', researchers have constantly found slow MDGs achievements of fragile states. Harttgen and Klasen (2012) have examined if variation in

4. For details, please refer to the following links respectively:
- Failed States Index (Fund for Peace) <http://ffp.statesindex.org/>
- Country Indicators for Foreign Policy (Carlton University) < http://www4.carleton.ca/cifp/app/ffs_ranking.php>
- Index of State Weakness (Brookings Institution) <http://www.brookings.edu/research/reports/2008/02/weak-states-index>

definitions of fragile states[5] differentiate the results of their achievement of MDGs, and have found that fragile states, by any definition, are substantially worse off than non-fragile states for a variety of MDG indicators. When comparing the levels of MDG achievements, with all the definitions they tested, fragile states show significantly poorer results, although the extent of the poor results varies depending on the definitions used. 'Long-term fragile states' and 'CPIA all categories' are correlated with particularly poor outcomes in most indicators, while 'conflict-affected countries' are relatively better than with other definitions of fragile states.

The variation in the fragile states definitions does not alter the general tendency of the group's slow development progress. Though the lack of consensus on definitions can reduce the precision of analysis for the purposes of academic study, the differences between various fragile states definitions are not as large as the gap between fragile states and non-fragile states.

Slow MDGs achievements of fragile states as a group

In discussing poverty eradication, many scholars have pointed out that poverty in the post-2015 era will remain mainly in fragile states. In one of the first papers to highlight the significance of the issue, Gertz and Chandy (2011) argued that, while 500 million people escaped from poverty between 2005 and 2010, poverty in fragile states[6] will become a serous concern in the future. Table 1 below illustrates the trend. Based on the same definition, Chandy and Gertz (2011), found that while only 20% of the world's poor lived in fragile states, in 2005, this share will exceed 50% in 2014. Furthermore, Chandy et al. (2013) have estimated the effects of various poverty reduction scenarios and predicted that the share of world's poor living in fragile states will rise to half in 2018 (from one third today), and nearly two-thirds in 2030. As Kharas and Rogerson

5. Harttgen and Kasen (2012) applied the following 15 different categorizations of fragile states: CPIA (lower than 3.2 in 2008 CPIA), DFID list in 2007, OECD list in 2008, CIFP list in 2008, Conflict-affected states (between 2003 and 2007 based on the Uppsala Conflict Database Programme), failure list of Stewart and Brown (2009), All fragile (countries that are defined as fragile states in all the categorizations mentioned before this), LDCs, four CPIA sub-lists (four sub-categories in CPIA), CPIA all categories (countries that are included in all the four CPIA sub-lists), CPIA severe (CPIA score of less than 3.0 in 2008), and Long-term fragile (countries that always appeared on the CPIA list between 2003 and 2008).

6. They use the Failed State Index (FSI) issued by the Fund for Peace, and classify the countries in the "Alert" category (FSI larger than 90) as fragile states.

(2012) have pointed out, because poverty reduction in fragile states[7] is stagnant (while non-fragile states have consistently reduced poverty rates), the concentration of the world's poor in fragile states is becoming more and more acute.

Table 1: Share of world's poor by country category

2005

	LIC	MIC
Fragile	19.6%	0.9%
Stable	53.9%	25.6%

2010

	LIC	MIC
Fragile	23.7%	17.1%
Stable	10.4%	48.8%

LIC: Low-income countries / MIC: Middle-income countries (the World Bank's classification)
Source: Gertz and Chandy (2011)

Gertz and Chandy (2011) have not only pointed to the trend of increasing concentration of poverty in fragile states, they have also emphasized the changing nature of fragile states. While many fragile states are now obtaining middle-income status, poverty in fragile middle-income states will pose new challenges to international development. This growing share of poverty in middle-income countries is also under examination. Sumner (2012) estimated that, whereas 93.1% of the world's poor lived in low-income countries in 1990, this share had decreased to 29.1% by 2007. Sumner is hesitant to emphasize the significance of the poor population in fragile states, as he estimated that only 23.1% of world's poor live in fragile states while 60.4% lived in stable middle-income countries in 2007.[8] And yet , Gertz and Chandy (2011) have suggested that there will be more poor people in countries that are "middle-income but fragile or failed". These countries, such as Pakistan, Nigeria, Sudan, Cote d'Ivoire, Iraq, and Yemen, have very different characteristics from the LDCs or post-conflict situations. As they tend to be rich in natural resource endowments, resource management and inclusive development are major challenges in these countries.

Fragile states are lagging behind not only in terms of poverty reduction but also in various other development indicators. In their analysis of the achievement of the MDGs, Sapkota and Shiratori (2013) found that failure to meet MDG targets is most acute in fragile states, defined by OECD (2011). Among the 36 low-income countries, four countries (Democratic Republic of the Congo, Guinea Bissau, Liberia, and Somalia) have not

7. Using the same definition as Gertz and Chandy (2011).
8. Other 16.5% live in stable low-income countries.

achieved or are not on track for any single MDG target. Another 12 countries (Afghanistan, Burundi, Central African Republic, Chad, Haiti, Democratic People's Republic of Korea (North Korea), Mali, Niger, Sierra Leone, Tajikistan, Togo, and Zimbabwe) have achieved or are on track for only one MDG target. Out of these 16 countries, 15, except Mali, are listed as "fragile states" in the OECD report (OECD 2011).

Using the same dataset as Sapkota and Shiratori (2013), several other observations[9] can be made. First, many fragile states lag behind not only in development progress according to the indicators but also in the availability of data. Among 45 fragile states (based on the classification by OECD 2011), only 21 countries have comparable data for the goal to halve the poverty (MDG Goal 1 Target A). Secondly, poverty reduction in these countries is slower than in non-fragile countries. Among 21 fragile states, only six countries (Sri Lanka, Cameroon, Tajikistan, Pakistan, Nepal, and Guinea) have halved poverty since 1990, and Uganda is close to achieving the goal. In comparison to the 51 non-fragile states, among which 37 countries have achieved or are close to achieve the goal of having poverty, progress in fragile states is much slower. Even worse, in six fragile states (Georgia, Yemen, Cote d'Ivoire, Kenya, Guinea Bissau, and Nigeria), the poverty ratio has actually increased since 1990. Moreover, in another 24 fragile states without reliable statistics, the situation might be even more difficult. Thirdly, the countries that suffer most are often fragile states. There are only four countries whose primary school enrollment rates are less than 50%. Three of them (Eritrea, Sudan, and Democratic Republic of the Congo) are fragile states (the exception is Djibouti). Six countries (Haiti, Niger, Burkina Faso, Chad, Cote d'Ivoire, and Nigeria) out of seven (Mali is the only exception) with a primary school enrollment rate of less than 75% rate are fragile states.

While the *World Development Report 2011* (World Bank 2011) concentrated on the impact of violence and conflict on development outcomes rather than fragile states, the analysis shows similar results. Nearly 1.5 billion people live in countries affected by fragility, conflict, or large-scale organized criminal violence, and no fragile or conflict-affected low-income countries have achieved a single MDG. They have identified the negative impact of violence on various development results. A country experiencing major violence between 1981 and 2005 had a poverty rate

9. Analysis in this paragraph was made with the assistance of Jeet Bahadur Sapkota.

21 percentage points higher than a country that saw no violence. A child in a fragile or conflict-affected state is twice as likely to be undernourished as a child in another developing country, and nearly three times as likely not to be in primary school. Fragile and conflict-affected states and those recovering from conflict and fragility account for 70% of infant deaths, 65% of people without access to safe water, and 77% of children missing from primary school, excluding Brazil, Russia, India, and China (World Bank 2011).

Heterogeneity of relative progress in MDG indicators across fragile states

However, Harttgen and Klasen (2012) have also pointed out several weaknesses of grouping countries into a single category to be called "fragile states". They argue that, while it is clear that fragile states are performing more poorly in terms of MDG levels, their absolute and relative progress observed in MDG indicators is not, on average, worse than that of non-fragile states. If measured in terms of improvements in the MDG indicators between the base year (1990 or 2000) and 2008, there is little or no correlation between fragility and MDG progress. The reason that most will fail to reach the MDGs is due to the fact that their starting position was so low that the MDGs were very hard (if not impossible) for them to be reached by these countries in the first place.

In their analysis, although most definitions of fragile states are capable of indicating failure to achieve MDG targets, they are not good at identifying poor performers in terms of relative progress towards the achievement of the MDGs. In fact, there is a wide variety in the progress towards the MDGs of fragile states. While there are good performers such as Cambodia, Cameroon, Angola, Chad, Burundi, and Eritrea, countries such as Zimbabwe perform much worse than others. Given such heterogeneity within the group, Harttgen and Klasen (2012) have argued that it is not appropriate to use fragility as a criterion to allocate aid or develop uniform policy approaches.

Although there is clearly common pattern in which attainment of MDG goals is lagging behind in a particular group of countries often called "fragile states", these countries are not a homogeneous group with particular characteristics. Instead, their development progress is different for a variety of reasons. Therefore, while it is important to recognize that fragile states are lagging behind in MDGs indicators and

that they need special attention, it is also important to understand why each fragile state is lagging behind and how its unique characteristics can be addressed within the context of each country. The following section discusses suggestions to enhance such understandings.

3. Caveats to the fragile states concept

While fragile states are clearly being left behind in the achievement of the MDGs, each fragile state has its own reasons for slow development. As Leo Tolstoy's book *Anna Karenina* says, "happy families are all alike; every unhappy family is unhappy in its own way."[10] Although the fragile states concept is effective in advocating the importance of ensuring that no country and no person is left behind, some additional considerations are necessary to find policy options to support these countries. This section discusses some caveats to the fragile states concept and suggests some ways forward in designing new approaches to the challenges of fragile states.

Diversity within the group of "fragile states"

One caveat to the fragile states concept is that countries are fragile for various reasons while the concept puts a great variety of countries into just one category. Though there are some variations across different definitions, most fragile state definitions include countries in which no authority can effectively control its territory, governments excessively limit the liberty of citizens, and governments are highly corrupt and ineffective. These different types of countries require different types of policy measures to improve their development effectiveness. Thus, in order to support fragile states more effectively, we need to first identify the reasons why each country is fragile.

One option to address this problem is to classify fragile states into several categories. Many scholars have proposed possible options for such categorization. Takeuchi et al. (2011) have looked at state capacity and legitimacy, the two central issues of fragile states in the OECD definition, and have attempted to categorize fragile states into two types. If states are not capable of delivering basic public services, it is difficult to build their legitimacy ("capacity trap"). If states are capable of

10. Often quoted by Ricardo Hausmann in his explanation of the growth diagnostic theory (e.g. Hausmann et al. 2008).

controlling their territory, they may not feel the need to respond to people's shifting expectations, and risk losing their legitimacy ("legitimacy trap"). The two traps require very different approaches in terms of donor support for fragile states. Another approach was developed by Gravingholt et al. (2012), who suggested three criteria to classify fragility of countries: authority (monopoly of violence), capacity (to provide social services such as health, education, and water), and legitimacy (lack of political oppression). They proposed seven categories of countries based on these three criteria. With such categorization, donors can apply different approaches to, for instance, countries with low capacity and moderate authority and legitimacy (e.g. Ghana, Burkina Faso) and countries with high capacity and authority but low legitimacy (e.g. Tunisia and Egypt before the Arab Spring).

These attempts need to be further elaborated to identify the characteristics of each fragile state, thereby providing indications as to how donors should engage with the endogenous state-building process. As each fragile state has its own specific context, policy options, ideally, need to be adjusted differently in each country, but categorizations suggested by these scholars can be a useful entry point to such endeavors.

Sub-national issues that are hidden within non-fragile "states"

Another weakness of the fragile states concept is that it can only identify country-wide fragility, despite the trend of increasing incidence of sub-national violence and fragility. Parks et al. (2013) have demonstrated that although there are only a few fragile and conflict-affected countries in Asia, the region still faces various sub-national conflicts. In Africa, as Straus (2012) has pointed out, contemporary wars in the region are typically small-scale, fought on state peripheries and sometimes across multiple states, and involve factionalized insurgents who typically cannot hold significant territory or capture state capitals. World Bank (2011) has found that criminal violence and organized crimes are significant factors in Latin America, although the region has very few fragile states. Although there can be fragile situations or fragile areas in stable countries, they are not identified by any of the current definitions of fragile states.

In the post-2015 development framework, disparities within countries are important not only in terms of fragility but also in various

development goals. While disparities within countries are not captured in the MDGs framework, they need to be emphasized in the post-2015 development goals, given that there will be more poor people in middle-income countries. Some of the inequalities are correlated with fragility in sub-national areas because sub-national conflicts can hinder development progress in the area while inequality can be one of the causes of such conflicts. As sub-national fragility can become an obstacle for inclusive development, it needs to be more carefully addressed.

Insufficient attention to prevention

Finally, as countries are selected as fragile states mostly based on their present situation, attention to preventing future crises tends to be weak. Most of the fragility definitions and indicators are not aimed at preventing future crises, partly because they focus on measuring structural changes but also because they are unable to predict sudden incidents. For example, before the Arab Spring started in 2011, in the region, Yemen (15th most fragile in the worldwide ranking) was the only country listed in the "alert" category in the 2010 Failed States Index (FSI). Syria (48th) and Egypt (49th) were assessed as more stable than many African countries. Libya (111th), Tunisia (118th), and Bahrain (133rd) were estimated as even more stable. Though it is still unclear what the Arab Spring will mean for these countries' development, nevertheless, in dealing with risks of violent conflicts and other crises, it would be better to mitigate these risks and prevent tragic events and sufferings than to respond to crises posthumously.

While the fragile states definitions are often debated based on existing circumstances, efforts to overcome the fragility have to be prevention-oriented and incorporate long-term perspectives. As the frequent change of status for each fragile state suggests, countries can suddenly fall into fragility unless risks are effectively managed to prevent violent conflicts and severe crises. Policy debates by g7+, OECD/DAC, and others focus on state-building, (i.e. building of an "effective, legitimate and resilient states", OECD 2008b), to avoid violent conflicts and realize sustainable peace. Institution building and other policy measures are suggested as important elements for conflict prevention. Mine et al. (2013) suggest the interactions of horizontal inequalities, people's perceptions, and political institutions should be key considerations in

preventing violent conflict. In incorporating the fragile states agenda into the post-2015 framework, managing risks and building resilience should be considered as an essential perspective.

4. Lessons for the post-2015 framework

It is important to recognize that fragile states are not likely to achieving their MDG targets and they need special attention. However, as there is great variation among fragile states, careful attention needs to be paid in considering ways to support them. While all of them are lagging behind in reaching the MDG targets, there are a variety of different reasons for their slow development. In the search for better understanding of fragile states, the lack of statistics on these states remains a challenge. Basic statistics are often not available, particularly in severely unstable countries. It is important to improve the collection of statistical data as a foundation for better understanding.

While it is important to pay special consideration to difficulties of fragile states, it is also necessary to recognize that fragile states constitute a diverse group, in which contexts differ from one country to another. Given the wide variety within the group of fragile states, it is not realistic to think of a common policy option or a single set of goals appropriate for all the fragile states. More detailed categorization of countries may be an effective option to better adjust policy options to each country's context. There also needs to be a way to recognize the challenges of fragile situations in sub-national areas. Although disparities within countries are not captured in the MDGs framework, they are widespread and need to be addressed. Finally, more attention should be paid to preventing countries from falling into fragility through violent conflicts and crises. Building resilient societies that can manage risks of crises should be emphasized to prevent fragile situations.

Incorporating a fragile states agenda into the post-2015 framework does not necessarily mean creating a special category of countries but can rather imply an emphasis on context-specific, inclusive, and prevention-oriented approaches to addressing the challenges for each of these countries. In the discussion towards the establishment of a post-2015 development agenda, more attention should be paid at the global level to the challenges of fragile states. However, solutions for the problems in each fragile state should be sought within those states themselves to address particular challenges at the country or the local level.

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Chapter 3
Access to Infrastructure and Human Development: Cross-Country Evidence

Jeet Bahadur Sapkota

1. Introduction

Well-established evidence of significant impacts of infrastructure on economic growth is available (for a detailed survey of the literature, see World Bank 1994 and Samli 2011). However, the general approach to development has changed dramatically in recent decades from economic concentration to human focus (Todaro and Smith 2012). Quite extensive discussions are found on the impact and importance of infrastructure on human development because a lack of access to basic infrastructure services undermines the inclusive development (Tanaka 2012; JICA 2004; Fujita, Tsuruga, and Takeda 2013). Lack of access to basic infrastructure services itself can be defined as "infrastructure poverty" because without such access, it is extremely difficult to fulfill basic human needs. Admittedly there is a question of affordability and capability of utilizing the services (Hosono 2012); however, having access is the prime necessity (for a detailed discussion on access and affordability, see Briceno-Garmendia et al. 2004). Despite extensive policy discussion, limited empirical literature is found on the subject matter, especially on the impact infrastructure variables on human development (Kusharjantoa and Kim 2011). We are unaware of any such empirical work in a cross-country setting; therefore this is the first attempt to narrow this gap by exploring the impacts of three main infrastructure variables, namely, access to electricity, clean drinking water, and road networks on the human development index (HDI) and its components in developing countries.

Such an exploration is urgently essential because despite being one of the main vehicles in meeting the Millennium Development Goals (MDGs) (Scout and Seth 2012), infrastructures, especially transportation and energy, are missing from the MDGs framework. Some of the donor agencies, such

as Japan International Cooperation Agency (JICA), highly emphasized the importance of infrastructure in achieving the MDGs inclusively and took the infrastructure development as one of the key approaches to support the MDGs process (JICA 2010:11).[1] Thus the paper empirically tests the impacts of the three key infrastructure variables, i.e., access to electricity, access to clean drinking water sources, and road density, on improving the overall human development index (HDI) and its component indexes.

This paper is organized into five sections. Section 2 reviews the relevant literature and develops a dialectic model that presents the impact channels of infrastructure and human development. Section 3 describes the data and methodology, and section 4 presents the results showing the significant impacts of infrastructure on human development. Section 6 concludes the paper with the argument that access to basic infrastructure services would be one of the main vehicles to achieve human development goals; hence infrastructure access should be incorporated into the new international development strategies.

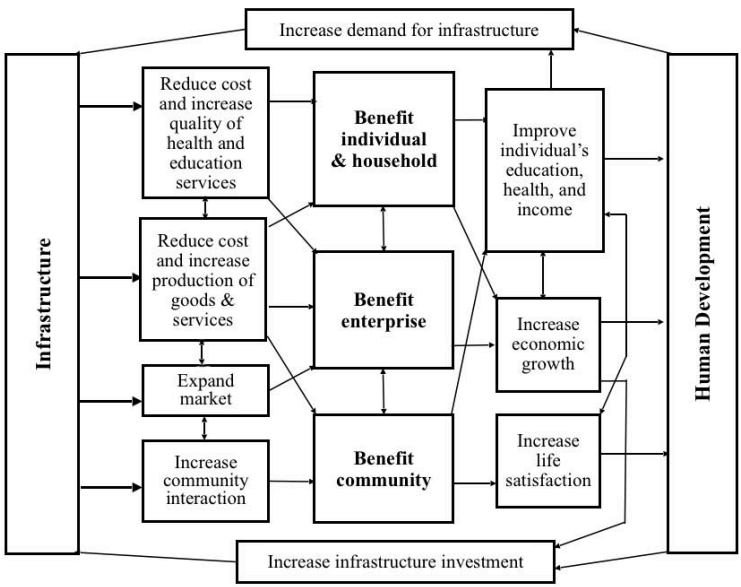
2. Impact channels of infrastructure and human development

Based on the existing literature, Fig. 1 presents a dialectic model of infrastructure and human development. The arrow of the lines shows the direction of the flow of impact; thus the lines with arrows at both ends indicate that the impacts flow both ways. The figure shows the multiple channels through which the links operate between infrastructure and human development. There is a firm consensus that the increased access to infrastructure services, such as energy, water, and transportation, directly benefits individuals and households, communities, and companies (World Bank 1994). It benefits individuals and households by reducing cost and increasing quality of health and education services that further help to improve the education and health of an individual, which ultimately increase the level of human development at local and national levels. For example, rural infrastructures increase the household and individual welfare by improving farm and nonfarm productivity, thus raising the level of income and consumption, reducing private costs, and saving time

1. In its policy document "JICA's Approach to the Millennium Development Goals: For inclusive and dynamic development," JICA listed infrastructure as one of the three major approaches to support the MDGs. The other two approaches are human security and capacity development.

(WHO/UNICEF 2008; Ezcurra et al. 2005; Ali and Pernia 2003). Such effects clearly lead to an improved level of human development. Access to infrastructure not only provides direct benefits by reducing the prices of manufacturing goods (Khandker et al. 2009) but it also indirectly generates new opportunities, such as employment generation (Gachassin et al. 2010; Jacobs and Greaves 2003), market expansion, and integration (Bhattacharyay 2012; World Bank 1994). A significant positive impact of infrastructure on health and education is also firmly established in the literature (Khandker et al. 2009; Bryceson and Howe 1993; Levy 1996). Interestingly, literature suggests that rural infrastructure improves the education and health of women and girls more significantly than it does of males (Levy 1996; Bryceson and Howe 1993).

Figure 1: A dialectic model of infrastructure and human development



Source: The author

Similarly, communities can benefit through increased interactions with group members and also through its increased size (Hurlin 2006), which helps to increase the level of satisfaction, one of the psychological factors of human development. OECD (2002) claims that apart from generating employment and boosting efficiency, infrastructure helps social inclusion through increased social mobility and preserves environment through the efficient use of natural resources. Their arguments are

supported with several case studies. For example, Kirubi et al. (2009) showed the significant contribution of community-based electric microgrids on rural development through community development in Kenya. Interestingly, sectoral studies focusing on the rural infrastructure by the World Bank (2004) revealed that infrastructure benefit is higher in less-developed communities than in more-developed ones because increased access to market and banking services, increased communication, and a reduced cost of doing business are usually more evident in less-developed communities.

Lastly, increased infrastructure services directly benefit business enterprises through expanded market opportunities, reduced cost of production, and increased production quality and volume of goods and services (Jacoby 2002). Literature suggests that rural community-based infrastructure, such as rural roads, rural small-scale electrification, and water supply and irrigation projects, significantly benefit small- and medium-scale enterprises by increasing land and labor productivity, improving the community's health and education levels, enhancing banking and communication services, and helping to commercialize agriculture (Kirubi et al. 2009; Khandker, Bakht, and Koolwal 2009; Mu and van de Walle 2007; Lokshin and Yemtsov 2005; Jalan and Ravallion 2003; Reinikka and Svensson 2002). These all increase the rate of economic growth and ultimately contribute to human development (World Bank 1994).

On the other hand, while individuals' education, health, and income levels rise, they create further demands for infrastructure services. Similarly, increased economic growth rate also helps to increase the quality and quantity of infrastructure services through increased investment in infrastructure development (Bhattacharya 2012). Therefore infrastructure variables are not purely exogenous rather than endogenous to human development. This issue is addressed in the method of empirical assessment in the following section.

3. Data and methodology

3.1 The data

3.1.1 Dependent variables

Human development is the dependent variable. To measure a country's

level of overall human development, we use the human development index (HDI), which was developed by the United Nations Development Program (UNDP) in 1990, aiming to provide a yardstick of human development of all member countries of the United Nations. The focus was on people, as the opening lines of the first HDI publication states:

> The real wealth of a nation is its people. And the purpose of development is to create an enabling environment for people to enjoy long, healthy and creative lives. This simple but powerful truth is too often forgotten in the pursuit of material and financial wealth. (UNDP, 1990:1)

The UNDP has been publishing the annual Human Development Report (HDR) for the world and occasionally for regions and member states since 1990. The HDR's basic principle is that the essential components of quality of life are the combination of a long and healthy life, education, and a decent standard of living. As a result, the HDI has measured human development through the use of three factors; longevity, knowledge, and GDP per capita measured in purchasing power parity (PPP).

Thus we used HDI and its component indexes as a dependent variable because its principles are reflected in the MDGs framework as it also sets health- and education-related goals together with income or poverty goals. See the technical notes of HDR 2011 for details on how the HDI and its components are calculated.[2] In brief, the health aspect is measured through life expectancy at birth and converted into the Health (or life expectancy) Index (HI), using a minimum value of 20 years and observed maximum value over 1980-2010. The Education Index (EI) is calculated using the population's mean years of schooling (of adults) and expected years of schooling (of children). The Income (or Gross National Income [GNI]) Index (II) is based on the GNI per capita (2005 PPP International $, using the natural logarithm) expressed as an index using a minimum value of $100 and observed maximum value over 1980-2011. The data of these dependent variables are taken from the HDI database of the UNDP.[3] As the HDI trend data are available in five-year intervals until 2005, we used the panel data of 1995, 2000, 2005, and

2. The technical notes can be accessed at: http://hdr.undp.org/en/media/HDR_2011_EN_TechNotes.pdf

3. The HDI database can be accessed at http://hdrstats.undp.org/en/tables/

2010. The analysis is limited to 91 developing countries because of the limited data availability for some independent variables. The names of countries covered in the analysis are listed in Appendix 1.

3.1.2 Explanatory variables

Infrastructure variables are the main explanatory variables of this study. According to the Economic and Social Commission for Asia and the Pacific (ESCAP) and Asian Institute of Transport Development AITD (2003), infrastructure is defined as the physical facilities, such as roads, airports, utility supply systems, and communications systems, together with services generating from these facilities; such as water, sanitation, transportation, and energy. Although a large number of the developing world's population has been gaining access to infrastructure services in recent decades, large numbers of people remain without access to basic infrastructure services that hinder their overall development.

For example, approximately 2 billion people gained access to electricity (GEA 2012) and clean drinking water (United Nations 2012) from 1990 to 2008. On the other hand, if the current trend follows, by the end of the next 15-year period of international development goals, the numbers without access will be just as large as they are today. This continued lack of access will quite likely retard the achievement of any development goals agreed for the post-2015 period.

Therefore the following three main infrastructure indicators are the main explanatory variables of this study. First, we use "access to electricity as the percentage of the population." Its data are taken from the World Bank's world development indicators (WDI) online database.[4] The literature suggests that increasing access to electricity improves the human aspects of development through increased time for study by girls and boys in a rural area, saving time for fuel-wood collection, increasing household income, and reducing poverty (Khandker et al. 2012, 13-14) that ultimately uplift the level of human development. A wide consensus among scholars believes that providing access to electricity and other modern sources of energy substantially contributes to increasing household welfare (e.g., ADB 2010; World Bank 2008; Cockburn 2005).

4. The World Bank's WDI database is one of the most comprehensive and up-to-date databases of development publicly available and can be accessed freely at http://databank.worldbank.org/data/home.aspx

Second, we apply "proportion of the population using improved drinking water sources." Its data are taken from the UN Statistics MDGs Indicators database.[5] It defines the improved water sources as a household connection, public standpipe, borehole, protected well or spring, and rainwater collection. Literature shows that water is itself an economically productive asset, and sound water infrastructure is significant in improving the health and livelihood of humans (Cleaver et al. 2005; Joshi 2004; Slaymaker et al. 2007). The human development impact of increasing access to clean drinking water also channels through time savings, which could reduce the burden on women and girls in rural areas who ultimately lead their productivity (Slaymaker et al. 2007).

Lastly, we used access to road, which is proxy by the "road density in terms of kilometers of road network per 100 sq. km of land area," and the data are taken from the WDI database. It defines road network as all roads in the country including motorways, highways, main or national roads, secondary or regional roads, and other urban and rural roads. Many scholars claimed that transport infrastructure has a higher impact than any other kind of infrastructure on economic growth, productivity, and even on poverty reduction (Sakamoto et al. 2010; Hook and Howe 2005; Ellis 1997). However, not many studies analyze the contribution of transport to the MDGs achievement (Estache and Fay 2007; Hook and Howe 2005; Estache 2004), and there are no transport-related issues within the MDGs framework.

We use four control variables that also potentially affect human development significantly. First, the consumer price index (2005 = 100) is taken as increasing the prices of daily consumption goods that always hit low-income families, whose health is thus adversely affected (World Bank 2012). Second, we control for population growth (annual percent) because of a large body of literature on the linkages between population dynamics and development, and population growth is always considered a negative factor of human development (Lee 2001; Egunjobi 1991).

A vast body of literature also exists on development impacts of globalization (for a detailed review of the literature, see Sapkota 2011); thus we control also for the level of globalization of the countries. This study uses the *Konjunkturforschungsstelle* (KOF) index of globalization because of its comprehensiveness and data availability. The KOF index

5. The database can be accessed at: http://unstats.un.org/unsd/mdg/Data.aspx

of globalization was introduced by Dreher (2006). Following the explanations of Clark (2000), Norris (2000), and Keohane and Nye (2000:4), Dreher defined globalization comprehensively as follows:

> Globalization is meant to describe the process of creating networks of connections among actors at multi-continental distances, mediated through a variety of flows including people, information and ideas, capital and goods. Globalization is conceptualized as a process that erodes national boundaries, integrates national economies, cultures, technologies and governance and produces complex relations of mutual interdependence (Dreher 2006, 1092).

Based on this comprehensive definition, he systematically constructed the KOF index of globalization, which measures the economic, social, and political dimensions of globalization covering 24 variables over time. The data, updated annually, are available for 207 countries from 1970 to 2010 on an annual basis.[6]

Lastly, a *democracy index* is used to control the effect of the level of freedom in a country on human development. Theoretical linkages of freedom and human development are well discussed in the literature after the Nobel Laureate Amartya Sen (1999) published his remarkable book, *Freedom as Development*, and democracy is considered one of the significant predictors of human development. For a detailed survey of the literature, see Gerring, Thacker, and Alfaro (2012). The data of democracy index are taken from the Freedom House, which consists of two key rights.[7] First, the political rights measure is a subjective indicator that annually ranks each country on a scale from one (the highest level of political rights) to seven (the lowest level). Second, the civil liberty measure is used to capture personal rights, such as free to express, organize, or demonstrate and is placed on the same scale from one to seven. These two measures of Freedom House are averaged as the overall democracy index.

All independent variables are taken as the most recent five-year average unless specified otherwise. For example, data of year 2010 are the annual average of data for 2006 to 2010. This allows us to use those variables that

6. Further details of the KOF index, its methodology, and the data are available at http://globalization.kof.ethz.ch/.

7. "Freedom House is an independent watchdog organization dedicated to the expansion of freedom around the world," and the data and definition are available at http://www.freedomhouse.org/.

have no data on a regular basis (in fact, most variables have no data for the some years). The average of the past 5 years also justifies the argument that the impact of the infrastructure of other independent variables on human development is less instantaneous and more gradual. The summary of statistics and the correlation matrix of the variables are presented in Appendixes 2 and 3.

3.2 Model specifications

To assess the impacts of infrastructure on human development, we employed the dynamic panel data model implemented by Kusharjantoa and Kim (2011) with some improvement. They simply regressed some infrastructure variables with the HDI and its component variables of the respective regencies within Java Island of Indonesia. However, we used HDI and its component indexes to make each regression consistent with each other. Because the panel data is of cross-country, the specification of each regression equation is desirable to change, and the data availability of the component variables are less consistent than the component indexes across countries. Furthermore, we need to control for some country-specific characteristics to minimize the biases that spur from country-specific characteristics. Therefore we control for some country-specific characteristics introducing control variables. We also control for the income group of countries through the income dummy. Thus the regression model is specified as follows:

$$Y_{it} = \alpha + \beta_1 Y_{it-1} + \beta_2 INFRA_{it} + \beta_3 C_{it} + \eta_i + \eta_t + \varepsilon_{it}$$

Where Y_{it} represents the dependent variables (i.e., HDI, EI, HI, and II as explained in Section 2.1) of country i at year t, Y_{it-1} is one period lag of the dependent variable, *INFRAit* represents the infrastructure-related variables, C_{it} represents the vector of control variables, η_i is the country-fixed effect, η_t is the time-varying effect, and ε_{it} is an error term. Each variable and the respective hypotheses are explained in the previous Section 3.1. The constant term is α, and β_1, β_2, and β_3 are the coefficients of each explanatory variable, which are the parameters of interest.

The lagged dependent variable is included in the set of explanatory variables because human development indicators tend to change slowly over time. This creates the dynamic structure of the model, which allows distinguishing between the short-term and long-term effects of

the independent variables. The coefficient on the lagged dependent variable $\beta 1$ represents the speed of adjustment. Static models assume that this parameter is equal to zero.[8] The long-term effects of an independent variable can be estimated by dividing the parameter of the independent variable by one minus the parameter of the lagged dependent variable (Greene 2008, 679).

Despite the above benefits, the dynamic structure of the model needs to control for possible biases arising from it (Kurita and Kurosaki 2007). Because given the inclusion of the lagged dependent variable and fixed-country effects, the OLS estimator is biased and inconsistent in short panels (Nickell, 1981). Furthermore, if the infrastructure or other independent variables and the error term "ε_{it}" in the model are not independent, unobserved variables can affect both the outcome variable and independent variable, so the estimated coefficient β_2 and β_3 can be biased. Such problem of endogeneity can be partially solved by controlling fixed effects and time trend, but if some unobserved variable changes over time and across countries, this problem will remain in the error term. To deal with this problem, a dynamic panel data method, especially the system generalized method of moments (GMM) estimator, is used as suggested by Arellano and Bover (1995) and Blundell and Bond (1998). This method is not only appropriate for endogenous independent variables or correlated with past and possibly current realizations of the error term, but also with fixed individual effects (in our situation, the country- specific effect) and heteroskedasticity and autocorrelation within individuals, but not across them (Roodman 2009). Results are based on the two-step estimator implemented by Roodman (2005) with Windmeijer (2005) correction for finite-sample, which is explained in detail by Roodman (2009) in Stata.

System GMM overcomes the problem of endogeneity by using a potentially large matrix of available instruments and weights them appropriately. However, the inclusion of extra instruments requires additional moment conditions; thus the system GMM builds a system of

8. In a simple equation without a lagged dependent variable, the independent variables capture the complete effects on (a or the?) dependent variable. However, when we include a lagged dependent variable in the equation, its coefficient captured all the effects of the previous history; thus any impact of independent variable represents only the short-run effect. For further explanation, see Greene (2008, 469).

two equations: the original equation as well as the transformed one.[9]

We include dummies for fragile countries per the "Harmonized List of Fragile Situations FY13," which is a harmonized list of the World Bank, African Development Bank (AfDB), and the Asian Development Bank (ADB). According to the harmonized definition from the World Bank, AfDB, and ADB, "Fragile Situations" are either (a) IDA-eligible countries with a harmonized average CPIA country rating of 3.2 or less (or no CPIA),[10] or (b) the presence of a UN and/or a regional peacekeeping or peace-building mission during the past three years." [11]

Dummies for time periods are included to control time effect and found jointly significant; however, they are excluded from the result table. Similarly, dummies for income groups of countries as specified by the World Bank are also included in the regression to observe the effects on different income groups of countries.

4. Results

We first report the impacts of access to infrastructure on HDI and its component indexes in Table 1, which represents the short-run effects. Column 1 of the table shows the relationship between explanatory variables and HDI, and columns 2, 3, and 4 show the relationships between explanatory variables and the component indexes of HDI, which include EI, HI, and II. We then report the long-term effect of infrastructure and other independent variables in Table 2.

In Table 1, column 1 shows the positive and significant effects of all infrastructure variables on HDI in developing countries. However, the

9. We assumed that all the independent variables are endogenous except the globalization index, and used as GMM-style instruments in xtabond2 command in Stata, as suggested by Roodman (2009). Similarly, the globalization index and the dummies are used as ivstyle instruments. Because the data structure is panels with gaps, we used an orthogonal deviation to maximize the sample size. The Sargan/Hansen test supports the joint validity of the instruments.

10. IDA is the International Development Association, the World Bank's fund for the poorest countries, and CPIA is the Country Policy and Institutional Assessment, the World Bank's diagnostic tool (rating from 0 to 6) to assess the quality of a country's policies and institutions.

11. For the list and a detailed definition of fragile countries, consult http://siteresources.worldbank.org/ EXTLICUS/Resources/511777-1269623894864/FCSHarmonizedListFY13.pdf (retrieved 26 February 2013).

levels of significance are varied at 1% for access to electricity and 5% for access to improved water sources and road density. The result firmly reconfirms the general claim of JICA (2004, 2010) and other international organizations (e.g., World Bank 1994), as well as scholars (e.g., Kusharjantoa and Kim 2011). All argue that accesses to infrastructure facilities are among the key determinants of human development.

In fact, the lack of access to infrastructure services, which is defined as "infrastructure poverty" in this study, not only hinders the living standards and economic growth, but it also limits human development. It is obvious that the people and communities from the areas where the infrastructure poverty remains high find themselves lagging far behind the MDGs if we replicate these global goals at the local level. Indeed, prevalence of infrastructure poverty is extremely high in many parts of the world. For example, it is estimated that 780 million of the world's population still lack access to clean water sources (UNICEF and WHO 2012). Situation of access to electricity is more serious than the situation of access to clean water sources and road. For instance, the World Bank estimates that "nearly 75 percent of Sub-Saharan Africans, or 550 million people, do not have access to electricity. In South Asia, some 50 percent, or 700 million people, lack access. About 90 percent of those without access in South Asia lives in rural areas."[12] Such lack of access will continue if there are no new appropriate initiatives at either global or local levels, and such infrastructure poverty will significantly hinder the global and local development also after 2015 (Scott and Seth 2012).

The results of the other dependent variables, EI, HI, and II in columns 2, 3, and 4, respectively, are firmly consistent with the results of HDI. However, the effects of access to electricity and access to clean water sources are more significant to increase education and health indexes, whereas the road density is highly significant to increase income index. It is intuitive that electricity and clean water are more sensitive to education and health, and road is more sensitive to income.

12. http://go.worldbank.org/4UU59P0XM0 (retrieved: 6 March 2013)

Table 1: Human development impacts of infrastructure, 1990-2010

Dynamic panel-data estimation, two-step system GMM

	Dependent variables			
Independent variables	(1) Human Dev. Index (HDI)	(2) Education Index (EI)	(3) Health Index (HI)	(4) Income Index (II)
Lagged dependent variables	0.34912*** (0.09351)	0.57478*** (0.09266)	0.19633*** (0.06848)	0.43883*** (0.12288)
Access to electricity (% of population)	0.03240*** (0.01181)	0.03544** (0.01565)	0.05328*** (0.01853)	0.00592 (0.01515)
Proportion of population using improved drinking water sources, total	0.11275** (0.05353)	0.13805*** (0.04716)	0.10617* (0.05939)	0.05079 (0.04635)
Road density (km of road per 100 sq. km of land area)	0.05141** (0.02515)	0.04178 (0.04398)	0.04260 (0.05200)	0.13297*** (0.03628)
Consumer price index (2005 = 100)	-0.01500** (0.00696)	-0.00905 (0.00915)	-0.02032* (0.01063)	-0.00654 (0.01186)
Population growth (annual %)	-0.00633 (0.00934)	-0.00484 (0.01291)	-0.01627* (0.00959)	-0.00686 (0.01765)
KOF index of overall globalization	0.10241** (0.04744)	0.01045 (0.07020)	0.04040 (0.04924)	0.20911*** (0.05919)
Democracy index	-0.01557 (0.02109)	-0.04617 (0.02467)	-0.02825 (0.03033)	0.02541 (0.03485)
Dummy for fragile countries	-0.07019** (0.03506)	-0.08616** (0.03458)	-0.08324** (0.03595)	-0.10107** (0.04270)
Dummy for low income countries (LIC)	-0.17442*** (0.04562)	-0.20543*** (0.06658)	-0.07751 (0.06029)	-0.19201** (0.08239)
Dummy for lower middle income countries (MIC)	-0.09049*** (0.02972)	-0.06545*** (0.02379)	-0.04590 (0.03157)	-0.10996** (0.04440)
Constant	-1.34578*** (0.31975)	-0.62697 (0.41866)	-1.04931*** (0.27421)	-1.28960*** (0.36888)
Observations	237	237	237	237

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; Except HDI, EI, HI, and II (which represents the annual data at 5-year intervals), all data are average of the past 5 years' annual data (e.g., data for 2010 represents the average annual data from 2006 to 2010. However, the data of 1995 represents the average of the annual data from 1990 to 1995). All variables are in natural logarithm.
Source: UNDP's HDR database for HDI, EI, HI, and II; Dreher (2006) for KOF globalization index; Freedom House for Democracy index; UN Stats. MDGs Indicators database, available at http://unstats.un.org/unsd/mdg/Data.aspx, for access to improved water sources; and the World Bank's WDI online database, available at http://databank.worldbank.org/Data/Databases.aspx, for the rest of the variables.

Regarding the control variables, the results are consistent with the existing literature. The results show the significant negative impacts of consumer price index on HDI and HI, and significant positive impacts of the KOF index of globalization on HDI and II. The population growth rate is significant only at 10% to reduce the health index. Democracy index is found insignificant to all human development indexes.

Interestingly, the parameter of fragile countries dummy revealed that all the human development indexes of fragile countries are significantly lower than those of the nonfragile countries. The level of significance of such effects is 5% for all dependent variables. Thus all aspects of human development and poverty reduction progress of fragile countries largely depend on the pace of resolving conflicts and fragile situations in the subject country.

To compare the level of human development across different income groups of countries, we exclude the dummy (Or, dummies?) for upper middle income countries (UMCs) from the regression equation, the parameters of the dummies for low income countries (LICs) and lower middle income countries (LMCs) compare the level of human development and its components of LICs and LMCs with UMC. The results revealed that the level of human development is significantly lower in LMCs than in UMCs, also in LICs than in LMCs. The results are natural.

As discussed above, a dynamic panel data model can distinguish between the short-term effect and long-term effect of independent variables. For example, if we can increase access to electricity by 1% in a country at time *t*, it will increase the HDI by 0.03% in the short term because the magnitude of HDI can be estimated by using the estimated parameter of access to electricity variable. Similarly, if we increase access to clean water sources and road density by 1%, it leads to an increase of the HDI by 0.11% and 0.05%, respectively.

At the same time, these parameters allow us to estimate also the long-run effect. According to Greene (2008, 679), the inclusion of a lagged dependent variable allow us to account for the long-term effect, which is estimated by dividing the estimated parameters of the independent variable by one minus the estimated parameter of the lagged dependent variable. In this situation, the long-term effect of access to electricity on HDI can be obtained as 0.03 / (1-0.35) = 0.05. It means that every one-percentage increase in access to electricity will increase the HDI by

0.05% over the long term, which is double that of the short-term effect.

Table 2 shows the long-term effects of all independent variables for each regression equation, and it revealed that the long-term effect of all three types of infrastructure on human development and its component indexes are far greater than short-term effects. For example, the long-term effects of access to water sources and road density on HDI are 0.19% and 0.09%, whereas the short-term effects are 0.11% and 0.05%, respectively. Similarly, the long-term effects of access to electricity, to clean water sources, and to road density on EI are 0.07%, 0.27%, and 0.08%, respectively. In fact, the results revealed that the parameters of lagged dependent variable in each regression are highly significant at 1% and positive, which means past events or information are more salient for progress on human development.

Table 2: The long-term impacts of infrastructure on human development, 1990-2010

	(1)	(2)	(3)	(4)
	Human Dev. Index (HDI)	Education Index (EI)	Health Index (HI)	Income Index (II)
Access to electricity (% of population)	0.05414	0.07057	0.06426	0.01012
Proportion of population using improved drinking water sources, total	0.18840	0.27487	0.12806	0.08680
Road density (km of road per 100 sq. km of land area)	0.08591	0.08319	0.05138	0.22723
Consumer price index (2005 = 100)	-0.02506	-0.01802	-0.02451	-0.01118
Population growth (annual %)	-0.01058	-0.00964	-0.01962	-0.01172
KOF index of overall globalization	0.17113	0.02081	0.04873	0.35735
Democracy index	-0.02602	-0.09193	-0.03407	0.04342
Dummy for fragile countries	-0.11729	-0.17155	-0.10040	-0.17272

Note: The numbers indicate the percentage change in dependent variable corresponding to a 1% change in each independent variable.
Source: The author's calculation.

These results empirically verify the key importance of infrastructure on inclusive human development in developing countries. Therefore strategic policies to provide access to infrastructure to the neediest people need to be integrated into the upcoming post-2015 development strategies. How to integrate such policies, however, is beyond the scope of this paper.

5. Conclusion

Providing access to infrastructure to the poor is essentially important for poverty reduction and inclusive development. However, only limited empirical literature on the impacts of access to infrastructure on human development is found, despite extensive policy discussion. This study reduced this gap empirically assessing the impacts of access to infrastructure services on human development. The study used system GMM as the main method to estimate the impacts, which revealed that the selected three infrastructure variables, access to electricity, access to clean drinking water sources, and road density, all have significant positive impacts on HDI. In the situation of component indexes of HDI as dependent variable, access to electricity and access to clean water sources have positive and significant effects only on education and health indexes. On the other hand, road density is highly significant to increase the income index. It clearly indicates the key importance of water and energy access to health and education and transport infrastructure on the income aspects of human development.

These results can serve as important references for policy makers while designing policies for poverty reduction and inclusive development. If the people or areas lack access to basic infrastructure services, connecting people to the basic infrastructure, such as energy, clean water sources, and transportation services, can be the first step to poverty reduction and inclusive development. This is more relevant in the context of expiring MDGs and the ongoing global process of formulating post-2015 new-development strategies. Thus further study is suggested to learn the proper ways to incorporate the access to infrastructure on post-2015 development goals.

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Appendix 1. List of the countries included in the data analysis

1	Albania	32	Guinea	63	Pakistan
2	Argentina	33	Guinea-Bissau	64	Panama
3	Armenia	34	Guyana	65	Paraguay
4	Azerbaijan	35	Honduras	66	Peru
5	Bangladesh	36	India	67	Philippines
6	Belarus	37	Indonesia	68	Romania
7	Belize	38	Iran, Islamic Rep.	69	Russian Federation
8	Bhutan	39	Jamaica	70	Rwanda
9	Bolivia	40	Jordan	71	Senegal
10	Brazil	41	Kazakhstan	72	Serbia
11	Bulgaria	42	Kenya	73	Seychelles
12	Burkina Faso	43	Kyrgyz Republic	74	Sierra Leone
13	Burundi	44	Lao PDR	75	South Africa
14	Cambodia	45	Latvia	76	Sri Lanka
15	Cameroon	46	Lesotho	77	Sudan
16	Central African Republic	47	Lithuania	78	Swaziland
17	Chile	48	Macedonia, FYR	79	Syrian Arab Republic
18	China	49	Madagascar	80	Tajikistan
19	Colombia	50	Malawi	81	Tanzania
20	Costa Rica	51	Malaysia	82	Thailand
21	Cote d'Ivoire	52	Mali	83	Tunisia
22	Dominican Republic	53	Mauritania	84	Turkey
23	Ecuador	54	Mexico	85	Uganda
24	Egypt, Arab Rep.	55	Moldova	86	Ukraine
25	El Salvador	56	Morocco	87	Uruguay
26	Ethiopia	57	Mozambique	88	Venezuela, RB
27	Fiji	58	Namibia	89	Vietnam
28	Gambia, The	59	Nepal	90	Yemen, Rep.
29	Georgia	60	Nicaragua	91	Zambia
30	Ghana	61	Niger		
31	Guatemala	62	Nigeria		

Appendix 2. Summary Statistics

Variables	Obs.	Mean	Std. Dev.	Min.	Max.
Human Development Index (HDI)	364	0.555	0.152	0.206	0.805
Education Index (EI)	364	0.523	0.190	0.092	0.883
Health Index (HI)	364	0.694	0.157	0.165	0.934
Income Index (II)	364	0.482	0.137	0.171	0.738
Access to electricity (% of population)	364	61.282	36.920	1.5	100
Proportion of population using improved drinking water sources, total	364	78.108	18.415	16.7	100
Road density (km of road per 100 sq. km of land area)	364	30.321	35.724	0.5	201
Consumer price index (2005 = 100)	364	77.821	37.940	0.004	172.664
Population growth (annual %)	364	1.610	1.183	-1.575	5.294
KOF index of overall globalization	364	46.558	12.453	14.983	77.438
Democracy index	361	3.987	1.331	1	7

Appendix 3. Correlation Matrix

Variables	HDI	ele	water	road	CPI	pop	gobl	demo
Human Development Index (HDI)	1							
Access to electricity (% of population) [ele]	0.90	1						
Proportion of population using improved drinking water sources, total [water]	0.81	0.78	1					
Road density (km of road per 100 sq. km of land area) [road]	0.28	0.24	0.30	1				
Consumer price index (2005 = 100) [CPI]	0.20	0.15	0.16	0.07	1			
Population growth (annual %) [pop]	-0.03	-0.04	0.02	-0.07	-0.04	1		
KOF index of overall globalization [gobl]	0.71	0.62	0.62	0.14	0.42	-0.17	1	
Democracy index [demo]	-0.45	-0.29	-0.36	-0.23	-0.20	-0.09	-0.57	1

Part II

Inclusive Development , Resilience, and Human Security

Chapter 4
Realizing Human Security in the Post-2015 Era: Principles to Promote Inclusive Development and Resilience

Ryutaro Murotani

1. Introduction

As 2015, the target year for the achievement of the Millennium Development Goals (MDGs), approaches, the discussion regarding the post-2015 development goals is attracting attention. Unlike the process of creating the MDGs in the 1990s and 2000s, the global community is trying to organize as inclusive a dialogue as possible and listen to the voices of people from all around the world. The United Nations, for example, has been coordinating national and regional consultations, thematic consultations, and web-based online dialogues. Recognizing the value of such inclusive and participatory dialogues, this chapter aims to supplement the discussion through various empirical analyses of international development since the adoption of the MDGs. While the impact of the MDGs on raising public awareness has stimulated people to debate the new goals, careful examination of the experience of the MDGs is necessary to understand the state of the world today and design the new development framework for the future.

From the experiences of the MDGs we can learn two principal lessons. Firstly, the MDGs were based on the Millennium Declaration. Although some important issues from the Declaration were missing, the Millennium Declaration did serve as a guiding principle for the MDGs. In the same vein, a guiding principle is needed for the new development framework. Secondly, as the achievement of the MDGs has varied both across and within countries and regions, we need to analyze what has been achieved and what has not. This analysis is the first step towards establishing crucial elements for a guiding principle.

With these ideas in mind, this chapter first examines the MDGs

achievements. Based on that examination, it is argued that inclusive development and resilience are two perspectives that should be incorporated into the post-2015 framework. The chapter then discusses the potential of the human security concept as a guiding principle within which these two perspectives can be incorporated. It will also elaborate on the added value of having the human security concept as a guiding principle, and provide some concrete suggestions.

2. Achievements under the MDGs framework

In discussing the post-2015 development agenda, we should first learn from the experiences of the MDGs framework. The results of the MDGs framework vary across regions, countries, goals, and indicators. By closely looking at the MDGs achievements, we can recognize unfulfilled goals that need to be continuously pursued and find new challenges that are not included in the MDGs.

International organizations, such as the World Bank, the International Monetary Fund (IMF), and the United Nations (UN), have published their monitoring reports on the progress of the MDGs so as to demonstrate the overall trend of the MDGs achievement.[1] World Bank and IMF (2012) estimated that Goal 1A of halving poverty has already been met. However, many countries in Sub-Saharan Africa and those identified as low-income countries (LICs) are far behind the MDGs targets due to the combination of low starting points and difficult circumstances. Several large middle-income countries allegedly drove the global achievement of the MDGs. China led the way in global poverty reduction as it reduced the poverty rate from 60 per cent in 1990 to 14 per cent in 2008. While global poverty was reduced from 47 per cent to 24 per cent during this period, developing regions excluding China only reduced the rate from 41 per cent to 28 per cent (United Nations 2012).

Through an examination of the achievement of the MDGs, Sapkota and Shiratori (2013) have found disparities between and within nations. Their cross-country analysis also illustrates that Sub-Saharan Africa and South Asia are lagging behind in achieving the target of halving poverty (Goal

1. While various reports and analyses have been published, this chapter only briefly introduces some of them. The present chapter depends on Sapkota and Shiratori (2013) for more comprehensive review.

1A). Inequality between countries expanded between 2000 and 2010, as the average annual poverty reduction rates are lower in countries with higher initial poverty rates. Growing disparity was also observed in the under-five mortality rate (U5MR). On the whole, Sub-Saharan African countries, low-income countries (LICs), and fragile states are far behind the MDGs targets. Disparities within countries are another problem. Although most countries made progress on both rural and urban poverty reduction, some countries have shown an unbalanced pattern of urban and rural poverty reduction. The majority of countries experienced a higher rate of poverty reduction in urban areas than in rural. There are also some countries that experienced a heightening of the Gini coefficient in the years from 2000 to 2010. As the MDGs are often only monitored at the national level, these disparities were not well captured. The new development framework should be designed to cope with variations within countries so that it leaves no one behind. Promoting inclusive development will be the key to this challenge.

Several issues have been observed as factors that slow down and sometimes hinder the achievement of the MDGs. Downside risks and threats such as violent conflicts, natural disasters, infectious diseases, and economic crises can easily destroy development gains over a very short period and can obstruct the achievement of the MDGs. While nearly 1.5 billion people live in countries affected by fragility, conflict, or large-scale organized criminal violence, no fragile or conflict-affected low-income countries have achieved a single MDG. On average, a country which experienced major violence between 1981 and 2005, had a poverty rate 21 percentage points higher than a country that saw no violence. A child in a fragile or conflict-affected state is twice as likely to be undernourished as a child in another developing country, and nearly three times as likely not to be in primary school. If we exclude the four populous developing/emerging countries (Brazil, Russia, India, and China), fragile and conflict-affected states and those recovering from conflict and fragility account for 70 per cent of infant deaths, 65 per cent of people without access to safe water, and 77 per cent of children missing from primary school (World Bank 2011). Resource-rich countries face difficulties in effectively and peacefully translating their natural resources into socio-economic development. They face higher risks of onset of war and conflict (Fearon 2010). Natural disasters are also detrimental to development. The UN Office for Disaster Risk Reduction (UNISDR) (2012) estimated that disasters associated with natural

hazards have affected 4.4 billion people, caused US$2 trillion of damage, and killed 1.3 million people since 1992. In light of these various shocks and in attempting to make development progress more sustainable, it is essential to enhance the resilience of societies to cope with these downside risks and to quickly recover from the shocks. While the MDGs indicators measure achievements at a particular point, they pay no attention to the process of achievement, the sustainability of the results, or their resilience against crises.

3. Principles for the post-2015 development framework

Through an examination of the achievement of the MDGs, we found two perspectives, which were not incorporated in the MDGs framework, to be essential to the new development agenda: inclusive development and resilience. The large disparities across and within countries demand that future development progress should be more inclusive. The lack of attention to the capacity of societies to cope with and bounce back from external shocks alerts us to the need to be more conscious of the importance of building resilient societies. These two perspectives are interrelated and can be encapsulated by the concept of "human security". Those who are excluded from development progress tend to be more vulnerable to downside risks. The human security principles emphasize the need to address the insecurities of those people. In fact, the two perspectives are crucial elements for realizing human security in any given society.

Inclusive development

Since large disparities have been observed within and across countries, the need for inclusive development to address such disparities is essential. Inclusive development ensures that all stakeholders, including those who are lagging behind in the achievement of the MDGs, enjoy equitable opportunities to achieve socio-economic development. In order to achieve inclusive development, particular attention should be paid to those who are excluded from the process of development such as the poor, the vulnerable, and the disadvantaged.

Inclusive development, as defined by Kozuka (2014), should enhance people's well-being through advancing equality of opportunity. Inequalities of outcome, including income inequality, may be acceptable

as long as they are the result of differences in the degree of effort by individuals, rather than differences in their circumstances. In cases where unequal conditions create inequalities of outcome, policies need to be implemented to redress such inequalities and to level the playing field. Income redistribution policies might sometimes be necessary where they serve as an alternative or a complementary policy option to redress inequality borne out of the differing circumstances of individuals. Kozuka (2014) insists that income redistribution is not necessarily mandatory, but rather it is important to choose the best mixture of policy options, depending on the specific situations in each country to achieve inclusive development.

As both health and education are fundamental to equalizing opportunities, the provision of universal health coverage (UHC) and basic education to all can be regarded as the core instruments for building fundamentals for inclusive development. Lamichhane et al. (2014) illustrate how education has reduced poverty rates for people with disabilities in Nepal, despite the fact that people with disabilities are not always provided with equal opportunities for education. Infrastructure can be an effective tool for providing equal opportunities, as indicated by Sapkota (2014), who illustrated the cross-country evidence on the impact of infrastructure development on health and education.

Resilience

Although various shocks, including violent conflicts and natural disasters, obstruct development progress and interrupt the achievement of the MDGs, the MDGs framework does not look at the capacity of countries and/or societies to deal with these shocks. In the post-2015 framework, a society's capacity to cope with these disturbing shocks needs to be considered not only to maintain the achievement of the MDGs but also to realize long-term sustainable development in countries facing such shocks. Resilience – the capacity to cope with external shocks and recover from them – is an important element that needs to be mainstreamed in the post-2015 development agenda.

The importance of resilience has been highlighted recently in various fields, as the world witnesses an increasing number of disasters, including natural disasters, technological disasters, armed conflicts, and economic crises (Sawada et al. 2011, 2). A resilient society should have

the capacity to adapt to disturbances and recover. Although it may in some cases be impossible for a society to restore its pre-disaster state, resilient societies can recreate dynamism and build back better. Investment in preparedness for external shocks is also cost-effective in terms of development. It is often argued that one dollar of investment in disaster preparedness can save four to seven dollars in the aftermath of disaster (e.g. IPU and UNISDR 2010, 35).[2] As climate change increases the frequency of natural hazards, the social capacity to adapt and cope with such hazards becomes even more important.

Numerous policy options and perspectives have been suggested as ways of enhancing the resilience of societies against risks of violent conflicts and natural disasters. On prevention of violent conflict, Mine et al. (2013) focus on horizontal inequalities (HIs), people's perceptions, and political institutions for mitigating the risks of conflict and instability. With regards to natural disasters, Shimada (2014) points out the importance of job creation and social capital for reconstructing and recreating disaster-hit societies. Japan International cooperation Agency (JICA) promotes the disaster management cycle (DMC), which emphasized coordination and combination of prevention, response, and recovery and reconstruction tools. The Hyogo Framework for Action (HFA) also provides direction for building up the resilience of nations and communities to natural disasters. Given the increasing economic and human losses caused by natural hazards, the importance of disaster risk management has been increasingly emphasized by various scholars and policy makers (e.g. Mitchell and Wilkinson 2012).

Realizing human security through promoting inclusive development and resilience

The concept of human security integrates the two perspectives of inclusive development and resilience. By putting people at the center of focus, the human security viewpoint shows that the intersection of the two perspectives is at the heart of serious insecurities. Those who suffer from crises such as violence and conflict, as well as from natural

2. The cost-effectiveness of disaster risk reduction is very difficult to assess. UN agencies, including the UNISDR, often refer to the estimate of four to seven dollars return to one dollar investment. However, it is acknowledged that estimates can vary depending on definitions, hypothesis, and/or calculation methodologies (e.g. United Nations and World Bank 2010). Further research needs to be carried out in order to provide a more accurate assessment of cost-effectiveness.

disasters, are excluded from the upward development process. Moreover, those who are excluded from the upward development process are those most likely to be vulnerable to shocks including natural disasters and economic crises. Poor countries suffer disproportionately from natural disasters. Of the 3.3 million deaths from natural hazards since 1970, almost 1 million occurred as a result of the Africa's droughts alone (United Nations and World Bank 2010, 10). The poor are more vulnerable to natural disasters as they are more likely to live in higher risk areas and in poorly constructed houses. Poorer people are more dependent on public services. They therefore need to live as well as work in riskier places on cheaper land exposed to hazards, if public transportation is not reliable. This fact exists even if people know the hazard risks they face (United Nations and World Bank 2010, 2). In Bogota, Colombia, property prices differ based on the distance from earthquake-prone areas. The property price in the furthest quintile from the top 10 riskiest neighborhoods is more than six times higher than the comparable property in the closest quintile (United Nations and World Bank 2010, 4-5). Economic crises also inflict greater damage on more vulnerable people. The poorest populations in societies were affected more adversely by the global economic crisis that began in 2007. In particular, the poorer sectors of society were subject to layoffs, reduced work hours and wages, price shocks, reduced remittances, and reduced demand for jobs abroad (Turk et al. 2010). The human security perspective focuses on those who are socially weak and vulnerable, as well as those whose lives and dignities are under threat. The human security perspective tries to deal with various threats comprehensively, realize freedom from fear and want for those who are vulnerable to these threats, and promote protection and empowerment for these people.

Clearly, the two perspectives discussed above – inclusive development and resilience – are the indispensable elements for realizing human security. Inclusive development, through efforts to provide every individual with equitable opportunities, embodies the central perspective of human security – putting people at the center. The human security perspective focuses on people who are under threat and in the most difficult circumstances in order to prevent suffering among vulnerable populations. Promoting resilience, through building capacity to cope with various threats, embodies the perspective of human security to deal with downside risks. As Amartya Sen described in the Report by the Commission on Human Security (CHS), *Human*

Security Now, human security has a strong emphasis on downside risks for each individual, particularly for vulnerable people to cope with and possibly overcome sudden deprivation (CHS 2003, 8). Through this emphasis, the human security concept supplements the upward orientation of the human development concept. At present, the MDGs framework solely focuses on positive achievements through human development. However, the inclusion of the perspective of resilience, a focus on risks based on the human security concept, will supplement this framework to be more sustainable by dealing with serious threats that can destroy development achievements.

4. Human security

The concept of human security

Since it was discussed in the United Nations Development Programme (UNDP)'s *Human Development Report 1994*, the definition of human security has been debated by diplomats, government officials, scholars, practitioners, and many others. Despite the lack of consensus on its definition, human security is at the heart of the work of the United Nations. The UN Charter recognizes the link between development and peace (Fukuda-Parr and Messineo 2012, 24). The three pillars of the United Nations – human rights, development, and peace and security – can be integrated within the human security concept. The UN General Assembly Resolution on Human Security[3] adopted in September 2012 (A/RES/66/290) is a clear sign of the convergence of understandings. The Resolution will become a foundation for a clearer definition.

Although there is not yet a fully agreed definition of human security, the CHS report in 2003 provides the basic understanding and framework of the concept. The report highlights the following points as the characteristics of the concept:

1) People-centered: Human security concerns 'the individual and the community rather than the state.' It shifts the focus of security from defending the state against external aggression to protecting people from a range of menaces.
2) Menaces: 'Menaces to people's security include threats and

3. The Resolution A/RES/66/290 is officially titled as "Follow-up to paragraph 143 on human security of the 2005 World Summit Outcome".

> conditions that have not always been classified as threats to state security.' Human security includes 'protection of citizens from environmental pollution, transnational terrorism, massive population movements, such infectious diseases as HIV/AIDS, and long-term conditions of oppression and deprivation.'
> 3) Actors: 'The range of actors is expanded beyond the state alone.'
> 4) Empowerment: 'Achieving human security includes not just protecting people but also empowering people to fend for themselves.' 'In many situations, people can contribute directly to identifying and implementing solutions to the quagmire of insecurity.' (CHS 2003, 4-6)

In comparison with the concept of human development, although both share a people-centered focus, the concept of human security is more concerned with insecurities that threaten human survival. While the human development perspective focuses more on upward-oriented and positive development progress, the human security perspective supplements this focus by protecting vulnerable people from downturns and empowering them to cope with, and when possible overcome, downside risks. This contrast is aptly described by Sen as follows:

> Human security as an idea fruitfully supplements the expansionist perspective of human development by directly paying attention to what are sometimes called 'downside risks' … Human security demands protection from these dangers and the empowerment of people so that they can cope with – and when possible overcome – these hazards (CHS 2003, 8).

Sen uses the phrases 'growth with equity' and 'downturn with security' to encapsulate the two concepts (CHS 2003, 8). Mine and Gomez (2013) describe the concepts with the labels 'light and shadow'. Differences, commonalities, and links between human security, human development, and human rights have been well articulated by many scholars (see for example Gasper 2007; Tadjbakhsh and Chenoy 2007).

Inclusive and equitable development is referred to as an important element of the human security principles in the CHS report (2003). As the human security perspective puts people, rather than states, at the center of analysis, it accordingly pays attention not only to the national average but also to inequality within states. While the human security approach

presupposes the need for economic growth, given that protection and empowerment require a certain level of public goods provision and private sector activities, growth is expected to be more inclusive and equitable in terms of opportunity. The human security approach, which emphasizes empowerment for people who realize their own potential, is consistent with development through advancing equality of opportunity. Moreover, economic activities are interrelated with multiple dimensions of survival, livelihood, and dignity. In relation to the economic element of post-conflict recovery, the report says '[e]quitable and inclusive economic growth is critical to promoting political and social stability, while enlarging opportunities for people' (CHS 2003, 58). While the human security thinking is clearly concerned with extreme deprivation, the extent of such concerns within inclusive development depends on the way in which inclusive development is defined.

Resilience is referred to even more frequently in the report (CHS 2003). On many occasions the term resilience is discussed in relation to the empowerment of individuals and communities. The human security approach encourages prevention and mitigation of risks, urgent responses to sudden shocks, and recovery from damage. Consequently, community and individual empowerment is emphasized as crucial components in these risk-coping measures. The insistence of Chandler (2012) on the importance of resilience and human security in relation to violent conflicts highlights the inclination of the human security concept towards prevention and empowerment. He argues that the focus on resilience – working upon the empowerment of the vulnerable – can move the discussion on helping people in conflict and post-conflict zones beyond the debate over the use of force. Furthermore, resilience is becoming even more important in the context of the increasing number of natural disasters, which are often influenced by climate change. These debates can inform and enrich the understanding of the human security concept. Brown (2012) argues that debates on resilience provide views on how systems can deal with disturbances and surprise, and how they can adapt to change, while discussions on human security often emphasize system stability. On the other hand, in social ecological literature the focus is on systems and how they operate, and prominence is not given to the role of individuals in responding to changes (Brown 2012, 112–13). The human security perspective can bridge this gap by promoting the empowerment of individuals and communities in dealing with crises.

Debates on human security

The concept of human security has often been a source of controversy in the international community; however, a common understanding has been increasingly accepted in recent years. Since the publication of the CHS report, debates around the definition have continued, but they are now approaching a consensus. While issues around humanitarian intervention have been contested more and more within the concept of the responsibility to protect (R2P), the broader scope of the human security concept has been acknowledged by various scholars (e.g. Tadjbakhsh and Chenoy 2007). The term 'human security' has been included and discussed in a number of policy documents including those produced by Asia Pacific Economic Cooperation (APEC), the G8 summits, and the World Economic Forum, as well as in the two Reports of the UN Secretary-General[4], and the World Bank's *World Development Report 2011*.

The UN General Assembly Resolution on Human Security in September 2012 (A/RES/66/290) is a clear sign of the convergence of understandings on human security. The Resolution will become a foundation for a clearer definition. It states that 'human security is an approach to assist Member States in identifying and addressing widespread and cross-cutting challenges to the survival, livelihood and dignity of their people.' (para. 3) It also recognizes that 'development, peace and security and human rights are the pillars of the United Nations and are interlinked and mutually reinforcing, achieving development is a central goal in itself and the advancement of human security should contribute to realizing sustainable development as well as the internationally agreed development goals, including the Millennium Development Goals.' (para. 4.) The Resolution reaffirms that the notion of human security is linked to the MDGs and eventually the ultimate objectives of the United Nations.

Important elements of the human security perspective have also been recognized by the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda for the UN Secretary-General. The communiqué of their third meeting in Monrovia, Liberia, stated: 'The protection and empowerment of people is crucial' and '[t]his is a global, people-centered and planet-sensitive agenda…' The communiqué of their

4. The UN Secretary-General has issued two reports on Human Security as the follow-up to the paragraph 143 of the 2005 World Summit Outcome (A/RES/60/1). The first report (A/64/701) was issued on 8 March 2010, and the second report (A/66/763) on 5 April 2012.

fourth meeting in Bali, Indonesia, also stated: 'we agreed on the need for a renewed Global Partnership that enables a transformative, people-centered and planet-sensitive agenda…' Their final report in May 2013 refers to human security as a concept around which 'an agenda can be built' that will 'leave no one behind' (United Nations 2013a, 4).

The subsequent report by the Secretary-General, though not directly mentioning the term 'human security', recognized the important interlinkages between development, peace and security, and human rights by saying that 'upholding human rights and freeing people from fear and want are inseparable' and "[t]here can be no peace without development and no development without peace' (United Nations 2013b, 3, 15). In the UNGA Resolution on Human Security, human security recognizes the links between the three pillars of the UN in the same way. The report also recognized the basic principle of 'placing people at the centre' as a prerequisite for the success of the MDGs framework (United Nations 2013b, 4).

Human security has received attention in various consultation meetings organized by the UN. For example, the Dili Consensus, adopted at the Dili International Conference on the Post-2015 Development Agenda[5] in February 2013, reads '[w]hile our specific needs and priorities may differ, we all envision better lives for our people, based upon human security' (Dili Consensus, para 6).[6] In their open letter to the UN General Assembly, the network of civil society organizations coordinated by Global Partnership for the Prevention of Armed Conflict (GPPAC) and others[7] insisted that 'there can be no development without human security' and that '[a] strong human security approach to development is indeed the means through which long-lasting impact is ensured' (Peace Portal website 2013).

5. The Dili International Conference was organized as a participatory consultation meeting for government and civil society representatives from fragile and conflict-affected countries, and the Asia-Pacific region.

6. The whole text of Dili Consensus is posted on the organizer's website (see g7+ website 2013).
http://www.g7plus.org/news-feed/2013/3/1/the-dili-consensus-is-presented-and-endorsed-at-the-dili-int.html.

7. The letter was initiated by four civil society organizations: GPPAC (Global Partnership for the Prevention of Armed Conflict); IKV-Pax Christi; Alliance for Peacebuilding; and Civil Society Platform for Peacebuilding and Statebuilding. As of October 2013, the Consensus had been signed by 20 organizations from various countries including several conflict-affected countries in Africa.

5. Human security as a guiding principle

Based on the above-mentioned analyses and discussions, it is evident that the concept of human security has the potential to be a guiding principle for the post-2015 development agenda framework. The concept itself can shape the various directions of the debate surrounding the agenda. Koehler et al. (2012) have already featured the human security concept as a conceptual framework for the post-MDGs agenda. They argue that the notion of human security can: 1) combine human rights dimensions and the notion of human dignity and choice; 2) capture all the MDGs areas in a more interconnected and systematic fashion; 3) emphasize 'joined-up' thinking; 4) include the impact of income and wealth inequalities, and social exclusion; 5) acknowledge the importance of good governance; 6) examine objective situations and subjective perceptions, equity and well-being, social inclusion and social cohesion; 7) be used as a point of departure for participation; 8) emphasize environmental sustainability and integration of climate change adaptation in development strategies; 9) exhibit universal challenges; and 10) open new perspectives for the objectives, instruments, and management of the international system (Koehler et al. 2012, 18–20).

(1) Principles suggested by the human security concept

This chapter argues that the concept of human security can provide a conceptual backbone for the new development agenda framework. As a guiding principle, the concept implies various points that will give direction to the global community in the coming decades. These points will further enhance the strengths and supplement the weaknesses of the MDGs framework. They provide guidance for setting global goals as well as realizing them.

Focus on extreme difficulties

The human security perspective focuses on people facing extreme difficulties or dangers. It indicates the importance of poverty eradication and support for those who cannot achieve the MDGs. It suggests that we should address inequalities, social exclusion, and vulnerabilities. The human security perspective is concerned with violent conflicts and deprivation including poverty, pollution, illness, and lack of education. The definition given to human security by the CHS is 'to protect the vital core of all human lives in ways that enhance human freedoms and human

fulfillment' (CHS 2003, 4). The concept calls for addressing challenges to survival, livelihood, and dignity as fundamental for every individual.

Emphasis on preparedness

The human security perspective highlights concerns with various threats and perils such as wars, violent conflicts, natural disasters, and catastrophic accidents and illness. Society as a whole has to enhance its preparedness for these shocks. Because it is unrealistic and inefficient to expect each country to be prepared for every potential threat to every individual, international partnerships are required to collaboratively share the risks and strengthen societal resilience towards sudden shocks. Regional cooperation and global cooperation have to be developed to enhance preparedness to deal with large-scale hazards and mitigate the damage from disasters.

Multi-sector and comprehensive approach

The human security thinking integrates important sectors and challenges (including all the MDGs) through its comprehensive understanding of threats including freedom from fear, freedom from want, and freedom to live in dignity. By focusing on individuals, the MDGs can be analyzed as a set of interrelated goals. Putting people at the center also enables us to recognize challenges not included in the MDGs, measures for achieving the MDGs and other goals, subjective perceptions on threats and well-being, and the importance of the natural environment and sustainability.

Multiple actors

Various threats have to be dealt with by various actors. By putting people at the center of focus and analysis, we can identify various actors that can deal with these threats to individuals. As the human security approach promotes the combination of protection and empowerment, it can combine national policies with inter-governmental cooperation as well as with initiatives by local governments, civil society, private organizations, local communities, and people themselves. The human security approach encourages not only national governments but also non-state actors, such as civil society, to work together to address urgent threats. While the human security approach, as summarized by the UNGA Resolution on

Human Security, highlights the primary role and responsibility of national governments and societies, various actors should support efforts to realize human security and mutually reinforce state security and human security.

The idea of mobilizing various actors together might suggest a new global architecture to solve global problems, as problems are increasingly becoming too complicated to be addressed by a single actor. Governments have to collaborate with other actors, including people themselves, to tackle diverse challenges. At the international level, regional and global partnerships are needed. As the dichotomy between the North and the South becomes less and less relevant, both industrialized and developing countries are searching for new solutions to address complicated challenges. The human security approach encourages the collaboration of a broad range of actors and institutions, including individuals themselves, to create solutions to daunting challenges.

Sustainability

With climate change and natural disasters becoming an increasingly significant threat to human beings, the human security perspective not only focuses on the well-being of individuals but can also offer a people-centered and planet-sensitive perspective. The significance of the environment has long been recognized in the human security thinking. UNDP's *Human Development Report 1994* recognized 'environmental security' as one of seven components of human security. The human security approach emphasizes the importance of prevention of and readiness for unexpected threats. Climate change, by its nature, is a cross-cutting and multi-dimensional problem that requires mitigation and adaptation strategies, making it consistent with the principles of the human security approach. Climate change also increases threats to human security such as natural disasters and violent conflicts. Scholars have debated how the human security concept can place people, and the ways in which climate change threatens their needs, rights, and values, into climate change discussions that tend to be driven by models of environmental processes and to overlook people (Sygna et al. 2012). The human security concept tries to balance and integrate the social, economic, and environmental dimensions of sustainability by protecting and empowering people.

(2) Lessons from operationalization experiences

The concept of human security can also provide concrete and practical applications for the new global development framework because it has been recognized and developed as a practical concept. The experience of operationalization can provide lessons for the future endeavor to achieve new global goals and realize human security. In the past decade, based on the framework defined by the CHS, the UN and international society have made efforts to turn the concept into reality. The UN worked for norm setting through the debates in the Security Council, institutionalization through the establishment of the United Nations Trust Fund for Human Security (UNTFHS), and application through the UN agencies' projects and programs (Kubo 2010).

Various concrete experiences illustrate how the concept can be applied to tackle various threats to human beings through the combination of top-down protection and bottom-up empowerment. The concept of human security is often said to emerge from urgent demands on the ground, where humanitarian and development workers have witnessed serious insecurity threats. The CHS report (2003) described violent conflicts, migration, recoveries from violent conflicts, economic security, health, and education as major issues for human security. Subsequently, the UN took the initiative of addressing these issues through the human security principles. The UN Human Security Unit (HSU) exemplifies the application of the human security approach in its activities on climate change, peace-building, migration, urban violence, poverty reduction, and health (UN-HSU website).

The concept of human security has already been operationalized by various development organizations. The UNTFHS has encouraged UN agencies and organizations to adopt human security principles in their project implementation. JICA has also developed guidelines for applying the concept and has endeavored to use these in its operations.

Since its establishment in 1999, the UNTFHS has funded more than 200 projects by UN agencies in over 80 countries. Each of these projects was designed to exemplify the five basic principles for operationalizing human security: people-centered, comprehensive, context-specific, prevention-oriented, and protection (top-down) and empowerment (bottom-up) (UN-HSU website). According to the evaluation by

Universalia (2013), the human security approach was applied and found relevant in various contexts such as post-conflict, natural disasters, and severe development challenges. It encouraged more synergetic, people-responsive, and holistic modes of delivery in the UN operations. It also stimulated local and individual ownership. In Ituri, in the eastern Democratic Republic of the Congo (DRC), a multi-agency project by UNDP, UNICEF, UNHCR, and FAO addressed the full range of insecurities faced by individuals and communities, particularly those most affected by the conflict. In one of the most difficult post-conflict environments, bottom-up empowerment through the participation of local people at various levels enabled them both to identify their own needs and to collaborate with the local authorities and the UN agencies to strengthen their own resilience to current and future challenges.

When Mme. Sadako Ogata took up the presidency of JICA, the agency adopted the 'application of the human security concept' as one of the three pillars of its 2004 reform plan. Since then, it has tried to operationalize the concept in the field. The basic principle, four priorities, and four approaches to human security[8] have been disseminated widely among stakeholders as guidance for understanding and applying the concept in their operations. In such ways, the human security principles have been gradually mainstreamed within JICA. The support offered to the conflict-affected areas of Mindanao in the Philippines for example, was a case in which a comprehensive approach involving human security principles fostered the peace process. JICA began to provide socio-economic development assistance before the peace agreement, as it aimed to promote human security in the most vulnerable conflict-affected areas. The bottom-up support to local communities was supplemented by Japan/JICA's engagement in facilitating peace talks and monitoring the ceasefire. The combination of these top-down and bottom-up policies sustained the peace-building process and eventually enabled the framework agreement for peace between the Philippine government and the Moro Islamic Liberation Front (MILF) (Tsunekawa and Murotani 2014).

8. JICA's approach towards human security is defined as follows:
- Basic principle: Aid should be people-centered, and delivered to the people.
- Four priorities: (1) Cross - sectoral issues, (2) Combination of top - down and bottom - up approaches, (3) Partnership with various actors, and (4) Risk management.
- Four approaches: (1) To comprehensively target freedom from fear and want, (2) To pay consideration to the socially vulnerable, (3) To establish mechanisms to protect and empower people, and (4) To address global risks.

Through these operational experiences, the concept of human security has policy implications not only for designing the new development goals but also for achieving them and can provide practical lessons for policy makers and practitioners.

(3) Implications for setting goals and indicators

While the concept of human security can provide concrete principles for the new development framework, it might not be regarded as a useful tool for selecting goals and indicators for that framework. As it is comprehensive, multi-dimensional, and often subjective, human security is not an easy concept to translate into performance indicators. Numerous attempts have been made to define a human security or insecurity index (e.g. Brecke 2002). The Human Security Report Project, a research group in Canada, has published the Human Security Report several times. The most recent report highlighted sexual violence in wars and the negative impact of wars on education (Human Security Report Project 2012). Gomez et al. (2013) summarized the efforts by National Human Development Reports (NHDR) by multiple UNDP country offices, and classified them into several alternatives. Some NHDR dealt with various threats comprehensively, while others focused on specific threats (such as citizen security). Many reports have attempted to use people's perception of threats as a key indicator of imminent human insecurity issues. However, creating human security indicators is very complicated as the content of human security or human insecurity is in some respects situation-specific.

Nevertheless, in designing the new goals and indicators, the human security concept can suggest several principles. Inclusive development and resilience, both of which are recognized as crucial elements for human security, can be helpful in setting goals in line with the human security principles.

People-centered

Goals and indicators should address not only the national level, but should capture the situation of every individual so as to 'leave no one behind' (United Nations 2013a, 4; United Nations 2013b, 13). This requires consideration of inclusiveness and horizontal inequalities (HIs). UHC, providing every individual with access to healthcare systems, is

one example of this. Socio-economic infrastructures, such as roads, electricity, sanitation, and education, also represent important elements of development. These need to be measured not only at the national level but in terms of their inclusiveness in coverage and quality. Improved statistical data based on household surveys will be helpful in measuring development progress at the micro-level.

Comprehensive

Goals and indicators should not only cover specific sectors but should reflect the interrelation between freedom from fear, freedom from want, and freedom to live in dignity. People-centered approaches should shed light on how different threats are interrelated at the individual level. They need to embody cross-cutting issues including climate change. Resilience in the face of threats caused by climate change is not a single sector issue, but a multi-sectoral challenge. While simple goals and indicators have been effective in achieving specific issues, such as controlling particular infectious diseases, the empowerment of people needs a more comprehensive approach such as comprehensively enhancing health systems and/or establishing UHC.

Context-specific

While global goals and indicators are necessary, the new development framework should also be sensitive to contextual variations across countries, across localities within countries, or between individuals within localities. Particular attention should be paid to people's perceptions when considering different risks and vulnerabilities. In fact, recognizing the importance of context-specificity, many attempts at creating a human security index have incorporated subjective measures for feeling secure (Gomez et al. 2013). Freedom to live in dignity depends greatly on people's perceptions of their circumstances.

Prevention-oriented

The new development framework has to be sensitive to obstacles to human development and downside risks. Prevention of these hazards and disasters should be prioritized. Conflict prevention and natural disaster risk management are major challenges for the new framework. Goals and indicators have to be developed to measure societies'

preparedness for natural hazards and conflict risks. Indicators for preparedness have to consider the effectiveness of public institutions such as consensus-building mechanisms and public administration. They also need to pay attention to individual and societal empowerment, as reflected both in individual capacity and social capital.

Protection and empowerment

As both top-down protection and bottom-up empowerment are necessary to realize human security, the goals and indicators should not be limited to protection measures but should include perspectives for risk reduction, prevention, and the strengthening of resilience. Strengthening of social capital is an important element for community empowerment. As people themselves can contribute directly to identifying and implementing solutions, individual and societal capabilities need to be measured and monitored.

While these suggestions are not specific enough in themselves to identify the indicators, they can provide direction for policy-makers and experts on selecting goals, targets, and indicators. Although human security may not be a clear-cut concept that helps us to pick up appropriate indicators, as is evident from the analysis of the achievement of the MDGs, we not only need better indicators for the new development agenda framework but a principle that can overcome the weakness of the MDGs framework. We find inclusive development and resilience to be the key elements required in the new framework. The concept of human security will be a guiding principle for realizing this proposal. The global community should commit to achieving development for all, building social capacity to cope with various downturns, and realizing human security for all.

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Chapter 5
Inclusive Development: Definition and Principles for the Post-2015 Development Agenda

Eiji Kozuka

1. Defining inclusive development and equality of opportunity

Over the past few years, "inclusiveness" has attracted increasing attention in the international community. Several countries and development institutions have incorporated the term "inclusive" into their strategies, and now "Inclusive Development" is gathering momentum as a global development agenda.[1]

While the concepts of Inclusive Growth and Inclusive Development have been discussed in a number of papers by development institutions and researchers, the definitions found in the literature of these two terms vary and in some cases even contradict each other.

Some of this variation is related to the definition of growth within the term "Inclusive Growth" as compared to the definition of development. In general, economic growth is measured on one dimension—income—while development refers to multi-dimensional well-being, which includes not only increases in income but also improvements in other sectors such as health and education. Some literature on Inclusive Growth adheres to the standard definition of growth, and focuses mainly on the dimension of income; however, other literature using the term Inclusive Growth is actually concerned with multiple sectors, and

1. In 2007, the World Bank's then president, Robert Zoellick, declared that the vision of the World Bank Group was to contribute to inclusive and sustainable globalization (World Bank 2007). The next year, the Japan International Cooperation Agency (JICA) positioned inclusive and dynamic development as its new vision (JICA 2008), and the Asian Development Bank (ADB) set inclusive growth as one of the three agendas in its long-term strategic framework, Strategy 2020 (ADB 2008). The UN System Task Team on the Post-2015 UN Development Agenda (2012) proposed that inclusive social development and inclusive economic development should be two of the four core dimensions for the framework of the post-2015 development agenda.

in this regard resembles the term "Inclusive Development" discussed in another literature. To avoid the ambiguity, this chapter follows the general definitions of these terms, and therefore uses the phrase "Inclusive Development," to include various types of well-being beyond income.

The meaning of "inclusiveness" within this term is also subject to debate. Most of the literature recognizes that equality is the central concept of inclusiveness, but differs in regards to the type of equality that should be attained through development. It is therefore necessary to define both inclusiveness and equality in relation to Inclusive Development.

This chapter defines Inclusive Development as development that enhances people's well-being by advancing the equality of opportunity for all members of society, with particular attention to the poor, the vulnerable, and those disadvantaged groups normally excluded from the process of development.

To define the core concept of "equality of opportunity," this chapter draws on the idea formulated by modern egalitarian philosophers, such as Ronald Dworkin and John E. Roemer, who have explicitly added the perspective of individual responsibility to the theory of equal opportunity.

Their concept of equal opportunity is often rephrased as "leveling the playing field," and stands in contrast to equality of outcome, the critical difference being that the latter secures an equal outcome for all individuals without questioning the choices they made to affect that outcome. In contrast, equality of opportunity holds individuals responsible for the actions under their control and compensates only for the disadvantages beyond their control, so that all have the potential to achieve the same outcome.

However, these philosophers have slightly different ideas regarding what an individual has to take responsibility for and what she does not. Defining individual responsibility, Roemer (1998) distinguished the factors that affect an individual's outcome and divided them into *circumstances* and *effort*. These circumstances consist of a person's social and biological backgrounds, which are beyond the control of the individual and can include innate ability, race, gender, culture, family background, and other characteristics, depending on the outcome of interest. On the other hand, effort is an individual's choices under her

control; by expending more effort, the individual can enhance her level of outcome. Under this definition, an individual is responsible for the degree of effort she expends, but is not responsible for her circumstances.

For Roemer, equal opportunity means guaranteeing that those who apply equal degrees of effort end up achieving equal results, regardless of their circumstances. To form an equal opportunity policy, he proposed that the population be partitioned into several types according to their circumstances. Then, a policy should be chosen that maximizes the minimum level of advantage of individuals, across all types, who expend the same degree of effort.

Borrowing Roemer's example, let us consider access to a good life to be an outcome, and education to be an input by which one achieves a good life. Under the above definition, equality of opportunity becomes more than providing equal educational resources for all individuals, since different children have different circumstances and therefore different abilities to turn educational resources into a good life. Simply offering equal educational resources will, therefore, not result in equalizing educational achievement among children who expend the same degree of effort. To equalize opportunity for educational achievement, the differing abilities of those children should be compensated for as far as their abilities are determined by circumstances beyond their control.[2] This chapter incorporates this equal opportunity principle into the definition of inclusive development.

Once this equal opportunity view is adopted, the measures for evaluating the level of development need also to be redefined. The indicators that have been commonly utilized are (1) Gross Domestic Product (GDP) per capita, which is based on utilitarianism, and (2) the Human Development Index (HDI),[3] which takes into account the mean value of life expectancy, educational attainment and income. The ideas

2. Roemer (1998) did not intend to apply this principle into every policy in its full extent. It may be even inappropriate to adopt this in some cases, such as a competition for a specific job position like a medical doctor or athlete. The scope and the extent of equal opportunity should be determined depending on the issue in question and be customized to the particular context of each society.

3. The UNDP's Human Development Report introduced the Inequality-adjusted HDI (IHDI) in 2010, which adjusted the HDI for inequalities in the distribution of outcome of education, health, and income. However, IHDI is a supplemental index to the original HDI, not a replacement.

behind these indicators are quite different from the equal opportunity principle, since these measures focus on outcome rather than opportunity and on the average over the population rather than on the people with disadvantaged circumstances. To reflect the equal opportunity view, Roemer (2013) proposed new measures in terms of two dimensions: (1) the average income of those who are most disadvantaged by circumstances and (2) the extent to which differential effort, as opposed to differential circumstances, contribute to total inequality in a society. These measures can be applied to analyze the level of Inclusive Development in a society.

This equal opportunity view is ethically superior and has convincing appeal to the broader public. In fact, Roemer's theory has had a significant influence on the thinking about development, such as the concept of equity discussed in *World Development Report 2006: Equity and Development* (World Bank 2006).

Incorporating the equal opportunity principle into Inclusive Development will help clarify its confusing concept, and pave a way for measuring the level of Inclusive Development. Furthermore, it will make Inclusive Development attractive to the international community and citizens as a global development agenda.

2. Different definitions of inclusive growth and development

Discussions on Inclusive Growth and Development have been led mainly by Multilateral Development Banks such as the World Bank, the Asian Development Bank, and African Development Bank, and by researchers who have contributed ideas to these institutions. The following sections of this chapter compare how these authors define the concepts of Inclusive Growth and Development, and discuss how they are related to other development concepts such as pro-poor growth and equity, and how they differ from this chapter's Inclusive Development.

The document *What is Inclusive Growth?* (World Bank 2009) is one of the most frequently cited documents in this field. In its view, for growth to be sustained, it should be inclusive, broadly based across sectors, and include a large portion of the country's labor force. The document focuses on both the pace and pattern of growth; inclusive growth increases the size of the economy while ensuring equality of opportunity in terms of access to markets and resources, and an unbiased regulatory environment for

businesses and individuals. As the primary instrument for Inclusive Growth, the document supports productive employment over direct income redistribution, or more specifically, aims to improve the productive capacity of individuals and create an environment conducive to employment.

Strategy 2020 (Asian Development Bank 2008) advocates Inclusive Growth with two mutually reinforcing strategy focuses: high sustainable growth and broader access to opportunities. Although a unified definition for Inclusive Growth is not reached by these reports, more precise conceptual discussions on Inclusive Growth can be found in articles written for the Asian Development Bank, such as those by Ali (2007a and 2007b), Ali and Zhuang (2007), Kanbur and Rauniyar (2009), Klasen (2009), and McKinley (2010). Ali and Zhuang (2007), which should have had significant influence on the Asian Development Bank's strategy, defines Inclusive Growth as growth that creates opportunities and allows all members of a society to participate in and contribute to the growth process on an equal basis. Ali and Zhuang employ Roemer's distinction between inequalities arising from effort and those arising from circumstances, and maintain that Inclusive Growth strategy should address circumstance-related inequalities.

The *Inclusive Growth Agenda* (African Development Bank 2012) defines inclusive growth as "economic growth that results in a wider access to sustainable socio-economic opportunities for a broader number of people, regions or countries, while protecting the vulnerable, all being done in an environment of fairness, equal justice, and political plurality" (p. 2). Like World Bank (2009), the African Development Bank is concerned with broad-based growth across sectors, the rate and pattern of growth, and long-term sustainable growth, and it focuses on productive employment rather than income redistribution.

3. Inclusive growth and development in relation to pro-poor growth

Pro-poor growth was one of the central development agendas in the 2000s, and is defined as "a pace and pattern of growth that enhances the ability of poor women and men to participate in, contribute to and benefit from growth" (OECD 2006: 10).

The primary difference between Pro-poor Growth and Inclusive Growth is

found in their targets. While Inclusive Growth is concerned with poverty reduction, it focuses not only on the poor but on other groups excluded from the process of growth, such as the disabled, minorities, and people living in poorly developed regions. In some literature, Inclusive Growth targets an even broader segment of people. World Bank (2009) and African Development Bank (2012) are concerned with the majority of the labor force, the poor and middle-class alike, and Klasen (2009) admits that Inclusive Growth could benefit all levels of society, including even the rich.

The literature differs with regard to whether Inclusive Growth is in line with absolute pro-poor growth or relative pro-poor growth. Absolute pro-poor growth focuses on the pace of poverty reduction and is measured by how fast the average income of the poor increases; relative pro-poor growth, on the other hand, focuses on income distribution between the poor and the non-poor, and is achieved when the income of the poor grows faster than that of others, and income inequality therefore declines (DFID 2004).[4]

World Bank (2009) aligns its definition of Inclusive Growth with absolute pro-poor growth rather than relative pro-poor growth because, according to the document, the relative definition could lead to sub-optimal outcomes for both poor and non-poor households. In contrast, Klasen (2010) relates inclusive growth to the relative definition of pro-poor growth. Kanbur and Rauniyar (2009) claim that the distribution of income and well-being needs to be considered; the authors argue that, if growth is accompanied by poverty reduction and yet an increase in inequality, growth is pro-poor but not inclusive. In their definition, Inclusive Growth is necessarily pro-poor, but not vice versa.

These contradictory views on income inequality may to some extent be a reflection of different economic and social situations in different regions. Developing countries in Asia face rising inequalities, which is of concern to the Asian Development Bank. The benefits of rapid economic growth and poverty reduction in these countries have not been equally shared. While extreme poverty has decreased significantly, the number of people living on less than $2 a day remains high (Asian Development Bank 2012). The Asian Development Bank is concerned

4. In this discussion of Pro-Poor Growth, the Department for International Development (DFID) prefers the absolute definition of pro-poor growth in light of their commitment to the MDG Goal of halving absolute income poverty by 2015.

that inequality could hinder reform, or could lead to social and political tension and armed conflict (Ali and Zhuang 2007). On the other hand, in many African countries, the extreme poverty rate remains high despite robust economic growth in recent years and the existence of rich reserves of natural resources (African Development Bank 2012). These countries may prioritize the pace of poverty reduction.

Inclusive Development as defined in this chapter does not make a determination as to whether absolute pro-poor growth or relative pro-poor growth is preferable. It is concerned more with processes of growth that cause income inequality than income inequality itself. If income inequality arises due to different degrees of effort expended by individuals, the result could be acceptable to those concerned with Inclusive Development. If, on the other hand, income inequality results from unequal circumstances, policies to level the playing field should be sought. The same view is found in Ali and Zhuang (2007) and Ali (2007a and 2007b).

4. Inclusive growth and development in relation to equity

The concept of "equity" is also related to Inclusive Growth and Development. World Bank (2006) defines equity in terms of equal opportunity—meaning that the outcome of a person's life should be influenced most by her efforts and talents, not her background—and the avoidance of absolute deprivation, which means that the livelihoods of the most deprived people should be protected.

While the Inclusive Growth defined by Ali and Zhuang (2007) and Ali (2007a and 2007b) is aligned with this equity conception, the idea Inclusive Growth used by World Bank (2009) does not seem to be in the same line. Although the latter also uses the concept of equal opportunity in its definition of Inclusive Growth, its idea is less demanding, since it intends to equalize resources and access to markets and jobs for everyone without emphasizing different individuals' circumstances.

Inclusive Growth could even contradict the concept of equity if it seeks to maximize GDP per capita as utilitarianism does. The definitions found in World Bank (2009) and African Development Bank (2012) can potentially lead to this contradiction as they focus on both the pace and pattern of growth, and prefer productive employment to direct income redistribution. If the goal is to expand GDP per capita, it is understandable

to choose productive employment over income redistribution, because the latter can create a disincentive for individuals to work hard and, as a result, may lower the country's total production or GDP per capita. If the goal is an equitable society, however, income redistribution can serve as an alternative or a complementary policy option to redress inequality borne out of the differing circumstances of individuals.

The goal of this chapter's definition of Inclusive Development is achieved through equity, and is not based on the utilitarian ethic. Income redistribution therefore will not be removed from the policy options just because it can be inefficient in expanding total production. This chapter does not advocate for income redistribution without evidence, as it advocates for the best policy to be chosen among the various alternatives in accordance with the situations in each country.

5. Inclusive development for the post-2015 development agenda

In order to advance Inclusive Development in the global development agenda, several goals should be set to redress inequalities that arise from individuals' differing circumstances. To develop measures of Inclusive Development, those outlined by Roemer (2013) can be utilized, though they are meant for analyzing and comparing the degree of Inclusive Development of each country as a replacement for GDP per capita, and may not be suited for defining specific and uniform targets that every country should aim for.

Alternatively, the international community can establish goals that aim to ensure everyone attain a minimum level of outcomes in critical sectors, with particular attention focused on disadvantaged people.

Although many of the MDGs have already included this idea of minimum requirement, some specific sectors and disadvantaged people should attract more attention from the perspective of Inclusive Development. For example, education and early childhood development are critical sectors because they are fundamental in building children's physical and cognitive capacities, and because inequality of opportunity in these areas will exacerbate inequality in the future. Other areas such as employment and infrastructure should also be incorporated into the new global framework so that disadvantaged people gain equal opportunities for a decent job and a better life.

Education is a key sector for Inclusive Development, but despite its critical role, there is a growing concern that education may be losing its priority status (Burnett and Felsman 2012). This section of the chapter discusses why this concern should be dispelled, and includes a more concrete discussion on what policies should be prioritized from the perspective of Inclusive Development.

The MDGs include two goals related to education: (1) universal primary education (Target 2.A): ensure that children everywhere, boys and girls alike, will be able to complete a full course of primary schooling by 2015; and (2) gender equality in primary and secondary education (Target 3.A): eliminate gender disparity in primary and secondary education by 2005, and in all levels of education by 2015. Relative to the other goals, and particularly to the MDGs related to health, significant progress has been made toward the education goals. According to the World Bank's Global Monitoring Report, primary school completion is close to being on track to reach its target, and gender parity in school enrollment is on track (World Bank 2012). The numbers may give the impression that education will become a less challenging and less important issue in the near future.

In spite of these gains, UNESCO's Global Monitoring Report takes a more cautious view of the prospects for Target 2.A. Although many countries had been successful in achieving the goals for enrollment, progress has stalled in recent years. For example, between 2008 and 2010, the number of out-of-school children in sub-Saharan Africa has increased by 1.6 million, and the other regions in the world saw little progress (UNESCO 2012).

Moreover, even if Target 2.A. is met, a more fundamental challenge remains. The education MDGs focus on access to education alone, which is indeed the first step in education development, but they do not target the quality of education or learning, which is the real goal of education development. In this way the education MDGs are quite different from the health MDGs, which focus on both access to health care and crucial health outcomes such as child and mother mortality rates (Target 4.A and 5.A). If Targets 2.A and 3.A and Targets 4.A and 5.A are compared, as they are in World Bank (2012), it is therefore not surprising that much better progress has been observed in the education targets than in the health targets.
If the education MDGs had targeted learning outcomes, however, the results would be rather different. Cumulative evidence has demonstrated that many children are not learning at school, and that

educational disparities are widening across and within countries. It is estimated that out of 650 million primary-school-age children in the world, as many as 250 million either do not reach grade four, or reach the grade but are unable to read or write (UNESCO 2012). In response to this learning crisis, the international education community is shifting its priority to improving learning outcomes (World Bank 2010, DFID 2010, Brookings 2012, Burnett and Felsman 2012).

In light of these situations, several priorities have been identified as necessary to advancing Inclusive Development in the education sector:

First, universal primary education should continue to be the first priority. Since off-track countries tend to have other major challenges such as conflict and extreme poverty, achieving this goal may require redoubling efforts. If children in such countries are abandoned, the disparity between out-of-school and in-school children will increase even further in the future.

Second, every child should acquire basic literacy and numeracy in primary education. Priority should be placed on low-achieving children, since their performance can be affected by circumstantial disadvantages such as family backgrounds, native languages, and innate abilities, all of which are beyond their control. Recent research, such as Glewwe, Kremer, and Moulin (2009), and Pritchett and Beatty (2012), suggests that national curricula and textbooks are too difficult for the average children and only benefit academically high-performing students in many countries. Establishing targets for all children to acquire basic knowledge and skills would encourage countries and the international community to put more focus on disadvantaged children.

Third, children with disabilities should receive high-quality education in regular education systems. The number of children with disabilities is estimated to range from 93 million to 150 million, and many of them have been excluded from general education opportunities (WHO and World Bank 2011). Under the equal opportunity principle, however, people with disabilities deserve more educational resources than others because they are likely to face lower earnings and a disadvantaged life even if they expend more effort than those without disabilities.
Fourth, after achieving universal primary education, each country should expand the scope of "Education for All" into lower-secondary education. Secondary education is critical for children to develop the

skills needed for work and life, but the gross enrolment ratio for lower-secondary school is only 52% in low-income countries (UNESCO 2012). All children should acquire fundamental skills to stand at the same starting line before they look for a job.

6. Conclusion

This chapter has defined Inclusive Development as development that enhances people's well-being through advancing equality of opportunity. Although the target includes all members of society, the focus is primarily on the poor, the vulnerable, and the disadvantaged. Equality of opportunity is the central concept in this definition. While individuals are held responsible for the degree of effort they expend to enhance their well-being, disadvantages beyond their control should be compensated for. This idea of equal opportunity is more than simply non-discrimination; it aspires to achieve an equitable society.

From the perspective of Inclusive Development, the post-2015 development agenda should redress inequalities that arise from differing circumstances beyond each individual's control. To advance Inclusive Development, greater focus should be placed on education, early childhood development, employment, and infrastructure. In education, the first step is equal access, but this does not guarantee Inclusive Development. Education should take each child's circumstances into account, and special attention should be paid to disadvantaged children, such as low-performing and disabled children.

The same principle applies in other areas. Improving access to job opportunities, infrastructure, and other resources is the first step, but it is not enough. Inclusive Development requires further study into how people benefit from these opportunities: Do all types of people take advantage of opportunities in the same way? If specific types of people are deemed to be disadvantaged due to differing circumstances, these people deserve more resources to achieve the same outcomes as others who expend the same degree of effort. The post-2015 development agenda framework should include this perspective of equal opportunity.

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Chapter 6
Analysis of Poverty between People with and without Disabilities in Nepal

Kamal Lamichhane, Damaru Ballabha Paudel and Diana Kartika

1. Introduction

Persons with disabilities[1] face persistent inequality that hinders international poverty reduction strategies. Inclusive growth and development that seeks to "increase the capabilities, opportunities, and incomes of... groups which are consistently on the margins of economic, social and political life" is needed to address this persistent inequality (UNDP, 2013 p.xi). According to the World Bank (WB) and the World Health Organization (WHO, 2011), people with disabilities make up nearly 15 percent of the global population. Without involving them in development, progress in poverty reduction is severely hindered. One of the major factors for the low prioritization of disability issues is the dearth of data. As a result, people with disabilities are almost invisible in socio-economic status and poverty still remains as one of the major challenges for them, especially in developing countries. This paper is a preliminary attempt at quantitatively examining relations between disabilities and poverty.

1.1 Literature review

Studies on disability and poverty are rare. Some have focused on the role of education through findings on high returns to education for persons with disabilities (Lamichhane and Sawada, 2013), to improve the opportunities of people with disabilities, while others have studied the employment gap and wage differential between individuals with and without disabilities (Mitra and Sambamoorthi, 2008) to identify

1. In this paper, our definition of disability is in line with the UN convention on the rights of persons with disabilities that indicates disability to recover from the loss or limitation of social, economic and political opportunities because of the disabling environment and society's failure to respond to the difficulty arising from impairment itself. Impairment is a condition of the body or mind, such as lacking legs or hands, vision or hearing loss, or depression; it is an attribute of the individual.

barriers hindering equal outcomes. While Africa remains a hotbed for research with studies conducted on disabilities and the living conditions there through a comparison of people with and without disabilities (Loeb, et al. 2008), none have been conducted in Nepal or other South Asian countries.

Emerging evidence also shows a vicious circle of low education and subsequent poverty among people with disabilities in developing countries (Filmer, 2008; WHO & WB, 2011). Filmer (2008) states that young people with disabilities are substantially less likely to be in school compared to people without disabilities and suffer disadvantages due to disabilities. It also states that disability is associated with long-term poverty in developing countries, since their lack of school participation suggests they are less likely to have acquired sufficient training for better jobs and higher income (Ibid., 2008).

Among the 15 percent of people with disabilities in the world (WHO & World Bank, 2011), nearly 80 percent live in developing countries, making the worldwide population with disabilities one of the poorest and most marginalized segments of society (ILO, 2007; DFID, 2000). It is also estimated that people with disabilities make up 15 to 20 percent of the poor in developing countries (Elwan, 1999). While there are multiple factors contributing to the poverty among people with disabilities, poor and unequal access to education or employment and the unequal distribution of other resources are likely to be among the major causes of their poverty. Barnes and Sheldon (2010) argue that people with disabilities are systematically excluded from the mainstream of economic and community life in almost all societies. They further state that poverty and exclusion encountered by persons with disabilities and other oppressed groups in all societies will not be eliminated without fundamental structural change at the international level, thus highlighting the need for the inclusion of disability issues in development goals.

Additionally, while inequality, exclusion and (in)direct discrimination are widespread, people with disabilities are not yet considered to be the subject of investment when it comes to the formation of their human capital. Yeo and Moore (2003) report that in some developing countries, the belief persists that disability is associated with evil, witchcraft, bad omens or infidelity. The prevailing belief is that even if people with disabilities are educated and employed, they are less likely to make use

of their acquired human capital. Such a biased belief is one of many other reasons encouraging the exclusion of disability issues from being on the agenda of development goals. However, with their empirical findings, Lamichhane and Sawada (2013) have challenged this biased and traditional perception that people with disabilities cannot benefit from the investment in their human capital formation. In their study of the return on the investment in education for people with disabilities in Nepal, they found it to be ranging from 19.2 to 25.6 percent, which is two or three times higher than for people without disabilities (Psacharopoulos and Patrinos, 2004). Thus, it can be said that education and employment together play a central role in reducing poverty and improving the quality of life of people with disabilities. Since participation in the labor market is an essential component of economic and social development (Durlauf & Fafchamps, 2005), the lack of access of persons with disabilities to the labor market is a serious constraint to the improvement of their livelihoods.

The importance of human capital formation and poverty reduction for persons with disabilities is the main motivating factor that led us to this empirical work. In this paper, we compare poverty between people with and without disabilities in Nepal. Some studies have examined the role of education in fostering employment or wages, but none have compared poverty between persons with and without disabilities. This study is thus unique in that it seeks to compare the poverty profile together with poverty factors between these two groups. Poverty analysis is conducted using information from 5,988 households in the nationally representative data – Nepal Living Standard Survey (NLSS 2010/11) – published in 2011 by the Central Bureau of Statistics (CBS), Government of Nepal (CBS, 2011).

1.2 Nepal as the case country

Nepal, one of the poorest countries in South Asia, with a high rate of poverty and a low level of human development, experienced a violent civil conflict from 1996 to 2006 (Deraniyagala, 2005). Despite poverty reduction being the central policy focus of the country, Nepal is in the group of low income countries, with per capita income of 470 USD, and a high poverty level of 25.2 percent (WB, 2011).

Wagle (2005) analyzed multidimensional poverty in Nepal based on the

main indicators of poverty dimensions such as economic well-being, capacity and inclusion (economic, political and civic/cultural). Using data from a random survey of 625 households from Kathmandu, he found that among all of these poverty dimensions, the capability dimension appears to be highly influential, affecting every other dimension. He further suggests that economic well-being helps transform capabilities into other activities indicative of living conditions, including political and civic/cultural inclusion. However, his study has not addressed people with disabilities. The latest population census states that 1.94 percent of the total population of 26.6 million has some form of disability (CBS, 2012).

At the end of the decade-long civil war in 2006, despite many laws being amended to bring marginalized and historically excluded groups into the inclusive development framework, substantial improvement in the livelihood of people with disabilities is yet to be achieved. As Nepal is still in a transitional phase as a post-conflict nation, information on disability, poverty and the impact they have on each other is important for the formulation of policies and strategies to address disability issues not only in Nepal but also in other developing countries similar to Nepal. The rest of the paper is organized as follows: in section 2, we describe briefly the poverty of persons with disabilities on a global level; in section 3, data and empirical strategies are described; section 4 presents results and findings; and concluding remarks are presented in section 5.

2. Disability and poverty: a global comparison

This section shows the basic data on disability and various development indicators in 15 selected countries from different regions of the world, as shown in Table 1.

These countries are selected according to WB's classification in the World Development Report 2012. From low income countries (LIC) with less than a Gross National Income (GNI) per capita of $1,005, Nepal, Bangladesh, Kenya and Ethiopia were selected; from lower middle income countries (LMC) with a GNI per capita between $1,006 and $3,975, India, Sri Lanka, Pakistan, Ghana and Ecuador were selected. For upper middle income countries (UMC), South Africa, Malaysia and Brazil were used. Similarly, for Organization of Economic Cooperation and Development (OECD) member-countries with more than $12,276 GNI per capita, Norway,

Table 1: Disability, income, employment, schooling and poverty in selected countries

S. N.	Country	Classification of Economy	GNI per Capita (USD)	Prevalence of Disability* (%)	Unemployment Rate (%)	Average Schooling (years)	Poverty (% of Population below $1.25)
1	Nepal	LIC	490	21.40	2.70	4.00	55.10
2	Bangladesh	LIC	640	31.90	5.00	5.80	49.60
3	Kenya	LIC	780	15.20	N.A	7.30	19.70
4	Ethiopia	LIC	380	17.6	5.40	N.A	39.00
5	India	LMC	1,340	24.90	3.60	5.10	41.60
6	Sri Lanka	LMC	1,270	12.90	4.90	11.10	7.00
7	Pakistan	LMC	1,050	13.40	5.00	5.60	22.60
8	Ghana	LMC	1,240	12.80	3.60	7.10	30.00
9	Ecuador	LMC	4,510	13.60	6.50	8.10	5.10
10	South Africa	UMC	6,100	24.20	24.70	8.60	26.20
11	Malaysia	UMC	7,900	4.50	3.70	10.10	2.00
12	Brazil	UMC	9,390	18.90	8.30	7.50	3.80
13	Norway	OECD	85,380	4.30	3.60	12.30	N.A
14	Sweden	OECD	49,930	19.30	8.40	11.60	N.A
15	Finland	OECD	47,170	5.50	8.40	10.00	N.A

Source: World Bank. 2012. *World Development Report 2012 and 2013*. Washington, DC: World Bank.

*WHO (World Health Organization) and World Bank. 2011. World Report on Disability. Washington, DC: WHO and World Bank.

Sweden and Finland were selected. Based on this classification, we compare 4 LICs, 5 LMCs, 3 UMCs and 3 OECD countries. We have selected these 15 countries as their disability prevalence statistics are also available in the World Report on Disability, jointly published by WHO and WB in 2011.

Among the listed countries, poverty is highest in Nepal (55.10%) and disability prevalence is highest in Bangladesh (31.90%); average schooling years is the lowest in Nepal (4 years); and the unemployment rate is also lowest in Nepal (2.70%). The low unemployment rate in Nepal is due to the fact that about 47% of the population is underemployed, while about 1.4 million Nepali are working as migrant workers in foreign countries, including the Gulf States (Sapkota, 2009). Annually the amount being remitted into Nepal from overseas is approximately 200 billion Nepali rupees

(Sapkota, 2011), making up 23 percent of the country's GDP and is one of the top ten remittance recipient countries in the world (Samriddhi, 2011).

The general trend we see in this table is that countries with higher income have a lower prevalence of disability and vice versa. Similarly, from Table 1, we can see that poor countries with low levels of average schooling have higher prevalence of disabilities, as can be seen in the case of Nepal, Bangladesh, India and Ghana.

3. Research methodology

3.1 Dataset from Nepal

We use large-scale, and nationally representative data – Nepal Living Standard Survey (NLSS 2010/11) – published by the Central Bureau of Statistics (CBS), Government of Nepal (CBS, 2011). This data set is collected by CBS with technical assistance from WB. The data set contains a wide variety of information on sample households such as demographic characteristics of the household head and other members, housing, access to facilities, literacy and education, health services, maternity and family planning, migration and absentees, agriculture, consumption, income, employment status, farm and non-farm activities, remittances and transfer income, borrowing and loans, consumption adequacy, facilities provided by the government, and nutrition of children. Altogether, information from 5,988 households was collected in this survey. In this paper, we use an adjusted sample of 4,840 households with the household head between the economically active ages of 15 and 59 years. Among 4,840 households, 157 households are headed by persons with disabilities.

Prior to the survey design, in 2009 and 2010, the first author held meetings with CBS and requested to include disability-related information in the questionnaires. Nepal's disability-based organizations also consulted the CBS for the same purpose. As a result of this collective effort, for the first time in NLSS data collection history, two disability-specific questions were included: whether participants have any impairment(s) and (if any) what is the type of their impairment(s). The types of impairments included in the questionnaires are: physical impairments, visual impairments, hearing impairments, deaf, blindness, speech impairments, intellectual impairments and multiple impairments.

In this paper, we use the consumption-based national poverty line calculated by CBS, the Government of Nepal. According to CBS (2011), the national poverty line for Nepal is Nepalese Rupees (NRs) 19,261.18, which is based on the Cost of Basic Needs approach (CBN). In this approach, the poverty line can be defined as the expenditure value (in local currency) required by an individual to fulfill his/her basic needs in terms of both food and non-food items. While the poverty line in the previous round of the survey in 2003-04 (NLSS II) was an update of prices for the same basic needs basket estimated in 1995-96 (NLSS I), the poverty line for 2010-11 is based on a new basic needs basket of the poor to reflect changes in well-being over time.

3.2 Empirical strategy

3.2.1 Measures of poverty

For the analysis of poverty, we use Foster-Greer-Thorbecke (FGT) poverty measures, which are headcount ratio (P0), poverty gap (P1) and severity of poverty (P2). The FGT poverty measures are defined as:

$$P_a = \int_0^z \left(\frac{z-y}{z}\right)^{\alpha} + f(y)dy \quad \& \quad \alpha \geq 0 \tag{1}$$

Where y is the household per capita consumption expenditure, *f*(y) is its density (roughly the proportion of the population consuming y), *z* denotes the poverty line, and α is a nonnegative parameter. Since income data is missing in some observations and data on consumption is available, we use per capita household consumption to measure poverty.

For Nepal, the national poverty line based on per capita consumption is 19,261.18 NRs. Higher values of the parameter α indicate greater sensitivity of the poverty measure to inequality among the poor. We estimate poverty measures, $P\alpha$ for $\alpha = 0$, 1, and 2, which respectively defines the headcount index, the poverty gap index, and the squared poverty gap index.

3.2.2 Factors of poverty

In order to find the factors of poverty, we estimate a semi-log model as the form:

$$\ln(Y) = X\beta + u \tag{2}$$

Where ln(Y) is the dependent variable denoting log of per capita household consumption expenditure and X denotes a set of explanatory variables representing household characteristics, social and demographic, regional and ethnic characteristics, etc. Since the dependent variable is in natural logarithmic form and explanatory variables are in level form, the explanation of each coefficient is the relative change in the dependent variable with respect to absolute change in the explanatory variable. u is an error term.

3.2.3 Variables

For household per capita consumption expenditure, we construct consumption aggregates by adding the various goods and services consumed by each household over a period of 12 months. Various components of consumption are grouped together into three main categories – consumption of food items, consumption of housing and consumption of other items. Household level consumption (in monetary terms) is divided by the size of household so as to obtain the household per capita consumption expenditure.

Other variables are grouped into different categories such as the gender of household head (male, female), age of household head (ranging from 15 to 59 years, in five groups), education of household head (ranging from 0 to 17 years, in three groups), employment activities of head (according to sectors of employment), region (rural-urban), land assets (ranging from landless to large land owners in five groups), access to facilities within 30 minutes' walk (road, school, market center, hospital, electricity, piped water) and ethnicity (prevailing ethnicity or caste, in five groups). The details of the definitions of the variables are shown in Table 2. We compare poverty between persons with and without disabilities. As the unit of analysis is the household, a household whose head is a person with disabilities is counted as a household with disabilities.

Table 2: Definition of variables

Variable	Definition
Per capita consumption	Household per capita consumption in Nepalese Rupees (NRs)
HH size	Size of household.
Married	1 if married, 0 otherwise
Sex of HH	
Male	1 if male, 0 otherwise
Female	1 if female, 0 otherwise
Age of HH	
(15-23) years	1 if in age group (15-23) years, 0 otherwise
(24-32) years	1 if in age group (24-32) years, 0 otherwise
(33-41) years	1 if in age group (33-41) years, 0 otherwise
(42-50) years	1 if in age group (42-50) years, 0 otherwise
(51-59) years	1 if in age group (51-59) years, 0 otherwise
Education of HH	
(0-5) years	1 if HH having education of (0-5) years, 0 otherwise
(6-10) years	1 if HH having education of (6-10) years, 0 otherwise
11 years and above	1 if HH having education of 11 years or more, 0 otherwise
Activity of HH	
Unemployed/inactive	1 if HH is unemployed or inactive, 0 otherwise
Agriculture	1 if HH is employed in Agriculture, 0 otherwise
Manufacturing	1 if HH is employed in Manufacturing, 0 otherwise
Trading	1 if HH is employed in Trading, 0 otherwise
Service	1 if HH is employed in Services, 0 otherwise
Other	1 if HH is employed in Other sector, 0 otherwise
Region	
Urban	1 if from urban region, 0 otherwise
Rural	1 if from rural region, 0 otherwise
Land Assets Group	
Landless (0.00 ha)	1 if having 0.00 hectare of land, 0 otherwise
Marginal (0.00ha – 0.15 ha)	1 if having 0.00 – 0.15 hectares of land, 0 otherwise
Small (0.15ha – 1.00 ha)	1 if having 0.15 – 1.00 hectares of land, 0 otherwise
Medium (1.00ha – 4.00 ha)	1 if having 1.00 – 4.00 hectares of land, 0 otherwise
Large (4.00ha and above)	1 if having 4.00 and above hectares of land, 0 otherwise
Access to facilities	(within 30 minutes' walk without load)
Road, vehicle	1 if household has access to vehicle road, 0 otherwise
School	1 if household has access to school, 0 otherwise
Market center	1 if household has access to market center, 0 otherwise
Hospital	1 if household has access to hospital, 0 otherwise

Electricity	1 if household has access to electricity, 0 otherwise
Piped water	1 if household has access to piped water, 0 otherwise
Ethnicity[a]	
High Caste	1 if caste is Brahmin and Chhetri, 0 otherwise
Mongoloid	1 if from Mongoloid Caste, 0 otherwise
Newar	1 if caste is Newar, 0 otherwise
Madheshi	1 if from Madheshi Caste, 0 otherwise
Low Caste	1 if from Low Caste, 0 otherwise

a There are 125 castes/ethnic groups reported in this report and these 125 castes are re-categorized into five major ethnic groups for our study. The first group is High Caste, which includes the Brahmin and Chhetri castes of both Hills and Terai areas; these people are scattered all over the country and are considered the historically privileged caste. The second group is made up of Mongoloids, which includes the Magar, Tamang, Rai, Gurung, Limbu, Sherpa, Thakali, Jirel, Dura, Lepcha and Sunuwar castes. People from this group reside mainly in the Hills and Mountainous areas. The third group is Newar – a caste of people who are settled mostly in cities, including Kathmandu Valley, and are engaged in trade and commerce. The fourth group is Madheshi, which includes the Yadav, Rajbanshi, Kalawar, Kanu, Tajpuria, Dhimal, Sudhi, Santhal/ Satar, and Gangai castes, excluding the Brahmins and Chhetris from Terai. The last group is the Low Caste, which includes 'low castes' of Hills such as Kami, Damai, Sarki, and low castes of Terai such as Chamar, Dusad, Paswan, Musahar, Lohar, and Tatma. The so-called low caste people are historically the most deprived and discriminated against in Nepal, and are often deprived of access to mainstream development.

4. Results and findings

4.1 Descriptive Statistics

Table 3 shows the summary statistics of the whole samples that include the households whose heads are both persons with and without disabilities. This table gives the mean, standard deviation, minimum and maximum values of most of the variables used in the analysis.

Table 3: Summary Statistics

Variable	Mean	Std. Dev.	Min	Max
Per capita Consumption	46,218.12	42,577.89	4,686.45	510,733.10
Household Size	4.39	1.97	1.00	21.00
Household Head Married	0.92	0.27	0.00	1.00
Gender of HH				
Male	0.90	0.30	0.00	1.00
Female	0.10	0.30	0.00	1.00
Age of Household Head				
(15-23) years	0.04	0.19	0.00	1.00
(24-32) years	0.20	0.39	0.00	1.00
(33-41) years	0.29	0.45	0.00	1.00

(42-50) years	0.26	0.44	0.00	1.00
(51-59) years	0.21	0.41	0.00	1.00
Education of Head				
(0-5) Years	0.81	0.38	0.00	1.00
(6-10) Years	0.10	0.30	0.00	1.00
11 Years and above	0.09	0.28	0.00	1.00
Activity of Head				
Unemployed/inactive	0.30	0.48	0.00	1.00
Student	0.09	0.16	0.00	1.00
Agriculture	0.18	0.38	0.00	1.00
Manufacturing	0.07	0.26	0.00	1.00
Trading	0.02	0.14	0.00	1.00
Service	0.29	0.45	0.00	1.00
Other	0.03	0.18	0.00	1.00
Region				
Urban	0.35	0.47	0.00	1.00
Rural	0.65	0.48	0.00	1.00
Land Assets Group				
Landless (0.00 ha)	0.12	0.31	0.00	1.00
Marginal (0.00ha – 0.15 ha)	0.14	0.35	0.00	1.00
Small (0.15ha – 1.00 ha)	0.44	0.49	0.00	1.00
Medium (1.00ha – 4.00 ha)	0.10	0.29	0.00	1.00
Large (4.00ha and above)	0.20	0.40	0.00	1.00
Access to facility				
Road, vehicle	0.09	0.27	0.00	1.00
School	0.07	0.26	0.00	1.00
Market center	0.06	0.22	0.00	1.00
Hospital	0.04	0.20	0.00	1.00
Electricity	0.74	0.43	0.00	1.00
Piped water	0.28	0.45	0.00	1.00
Ethnicity				
High Caste	0.35	0.48	0.00	1.00
Mongoloids	0.29	0.45	0.00	1.00
Newar	0.09	0.28	0.00	1.00
Madheshi	0.15	0.35	0.00	1.00
Low Caste	0.1	0.32	0.00	1.00
Total number of samples	**4,840 (Persons with disabilities – 167, without disabilities – 4,673)**			

Average household per capita consumption is NRs 46,218.12, with a minimum of NRs 4,686.45 and a maximum of NRs 510,733.10. With the average household size of 4.39 people, 90 percent of households are headed by males, while 10 percent are headed by females. Four percent of household heads are in the (15-23) age group, 20 percent are in the (24-32) age group, 29 percent are in the (33-41) age group, 26 percent are in the (42-50) age group and 21 percent are in the (51-59) age group. The majority of household heads (81 percent) have a low/basic level of schooling of (0-5) years, 10 percent have a medium level of (6-10) years and 9 percent have completed schooling at a higher level (11 years and beyond).

Data also shows that 39 percent of sample household heads are either unemployed or inactive in the job market. Students, who make up 9 percent of the sample, are also included in this category. Another 18 percent are engaged in the agricultural sector, followed by 7 percent in the manufacturing sector, 2 percent in the trading sector, 29 percent in the service sector and the remaining 3 percent are involved in other sectors. Furthermore, nearly two-thirds (or 65 percent) of the households are from rural areas, and the remaining 35 percent are from urban areas. Despite land assets being one of the important indicators of poverty, data shows that 12 percent of households are landless and 14 percent have only marginal land assets less than 0.15 hectares (ha). Similarly, a majority (44 percent) have small land assets (0.15ha-1.00ha). Another 10 percent have medium (1.00ha-4.00ha) and 20 percent have large land assets (above 4.00 ha).

For access to facilities within 30 minutes' walk, figures are not too encouraging except for the access to electricity. For example, only 9 percent have access to roads (for vehicles), followed by 7 percent having access to at least a primary school. Access to market centers is also low, at 6 percent. When it comes to hospitals, the percentage of people having access is even lower, at only 4 percent. However, more than two-thirds (or 74 percent) have access to electricity and 28 percent have access to piped water in their houses. Although access to electricity is relatively high, the entire nation still experiences heavy load shedding (power cuts) in the winter. With regard to diversity of population, 35 percent belong to the so-called high caste, followed by 29 percent being Mongoloids; another 9 percent are Newar and 15 percent are Madheshi, followed by 12 percent being in the so-called low caste groups.

We also calculated the means of the two sub-samples: one is the group of

households whose heads have disabilities and the other is the group of households whose heads do not have disabilities. The results are shown in Table 4 and Table 5 below.

As a baseline, 167 of the sample population are persons with disabilities and the remaining 4,673 are without disabilities. As shown in row 1 of both Table 4 and 5, the poverty headcount ratio (P0) for persons with disabilities is 28.6 percent, whereas it is 26.6 percent for their non-disabled counterparts. Likewise, the poverty gap index (P1) and the squared poverty gap index (P2) also follow the same trend. Overall, the poverty gap (P1) is 7.4 percent for persons with disabilities whereas it is 6.3 percent for people without disabilities. Moreover, severity of poverty (P2) is 2.7 percent for persons with disabilities and 2.2 percent for those without disabilities. This result shows that people with disabilities have a higher value in poverty headcount, gap and severity.

Row 2 of Table 4 discusses poverty based on gender. In households without persons with disabilities, we find that male-headed households are poorer than female-headed households (P0, 27.3 versus 24.1). This joins other authors in disproving that female-headed households are the poorest of the poor (Buvinić and Gupta, 1997; Chant, 2003). A possible reason is that the involvement of women in the management of households or community projects has positive effects in the efficient use of resources for the betterment of household life and community processes (Kennedy and Peters, 1992; Dolisca, et al, 2006), although there is also the possibility that the direction of causality is the opposite: resourcefulness of a household helps female heads to sustain the household.

However, although female-headed households in Nepal generally face lesser poverty, it is not the case for women with disabilities. In households with persons with disabilities, the poverty rate is 26.4 and 37.6 percent for males and females, respectively, demonstrating that households headed by females with disabilities are more vulnerable to poverty compared to their male counterparts. When discrimination exists, it is likely that women with disabilities suffer from dual discrimination – first as a woman and then as a woman with disabilities and is thus at risk of being more vulnerable than their male counterparts.

Based on age groups in row 3 of Table 4, for persons with disabilities, P0 is higher in the age groups of 15-23 to 33-41 years than in the groups

Table 4: Gender, age, ethnicity, education, employment and poverty

	Persons with disabilities (Household heads)													Persons without disabilities (Household heads)											
		Based on poverty head count index (P0)				Based on poverty gap index (P1)				Based on severity of poverty index (P2)					Based on poverty head count index (P0)				Based on poverty gap index (P1)				Based on severity of poverty index (P2)			
	Obs.	Estimate	Std. Err	95% Conf.	Interval	Estimate	Std. Err	95% Conf.	Interval	Estimate	Std. Err	95% Conf.	Interval	Obs.	Estimate	Std. Err	95% Conf.	Interval	Estimate	Std. Err	95% Conf.	Interval	Estimate	Std. Err	95% Conf.	Interval
1.All sample	167	28.6	3.9	20.8	36.3	7.4	1.3	4.9	9.9	2.7	0.6	1.5	4.0	4673	26.6	0.8	25.1	28.0	6.3	0.2	5.8	6.8	2.2	0.1	2.0	2.5
2.Gender																										
Male	144	26.4	4.4	17.6	35.1	6.6	1.4	3.8	9.4	2.4	0.7	1.0	3.8	4228	27.3	0.9	25.6	29.1	6.5	0.3	5.9	7.1	2.3	0.1	2.0	2.6
Female	23	37.6	8.2	21.4	53.8	10.7	2.8	5.2	16.3	4.0	1.4	1.2	6.9	445	24.1	1.3	21.5	26.8	5.7	0.4	4.9	6.5	2.0	0.2	1.6	2.4
3.Age																										
15–23 years	7	43.8	22.0	0.3	87.2	12.1	6.1	0.1	24.1	3.4	1.7	0.0	6.7	183	22.5	3.8	15.1	29.9	5.7	1.5	2.8	8.6	2.5	0.8	0.9	4.0
24–32 years	22	40.9	11.2	18.8	62.9	9.6	3.7	2.2	16.9	4.0	2.2	-0.3	8.3	921	26.8	1.6	23.6	30.0	6.5	0.5	5.5	7.5	2.3	0.2	1.8	2.8
33–41 years	40	38.5	8.3	22.0	54.9	9.9	2.5	5.0	14.9	3.2	1.0	1.3	5.1	1354	28.5	1.4	25.8	31.2	7.0	0.4	6.1	7.9	2.5	0.2	2.1	2.9
42–50 years	48	21.4	6.5	8.5	34.3	5.5	1.9	1.7	9.3	1.9	0.8	0.3	3.5	1230	24.9	1.5	22.0	27.8	5.9	0.5	5.0	6.9	2.2	0.3	1.7	2.7
51–59 years	50	21.3	6.9	7.7	34.9	6.0	2.6	0.9	11.2	2.6	1.6	-0.5	5.7	985	26.3	1.7	23.0	29.6	5.8	0.5	4.9	6.7	1.9	0.2	1.4	2.3
4.Ethnicity																										
High Caste	55	24.0	6.8	10.5	37.5	3.9	1.3	1.2	6.5	0.9	0.4	0.2	1.7	1654	18.2	1.1	16.0	20.4	4.5	0.3	3.8	5.1	1.5	0.2	1.2	1.8
Mongoloids	53	22.9	6.2	10.6	35.1	7.6	2.4	2.8	12.3	3.3	1.2	0.8	5.7	1353	30.0	1.5	27.2	32.9	7.0	0.5	6.1	7.9	2.5	0.2	2.0	2.9
Newar	12	17.9	11.7	-5.2	40.9	4.3	3.8	-3.2	11.8	1.5	1.4	-1.3	4.4	412	4.2	1.2	1.8	6.5	0.9	0.3	0.3	1.5	0.3	0.1	0.0	0.5
Madheshi	28	40.0	10.3	19.6	60.4	9.5	3.0	3.5	15.4	3.0	1.2	0.6	5.5	707	32.5	2.0	28.6	36.5	7.2	0.6	6.1	8.4	2.3	0.3	1.8	2.9
Low Caste	19	45.8	12.6	21.0	70.7	15.3	5.3	4.9	25.8	6.4	3.2	0.1	12.8	547	46.7	2.3	42.1	51.3	11.9	0.9	10.2	13.6	4.5	0.5	3.5	5.4
5.Education																										
0–5 Years	140	33.1	4.4	24.4	41.9	8.6	1.4	5.8	11.4	3.2	0.7	1.7	4.6	3807	30.3	0.9	28.6	32.0	7.3	0.3	6.7	7.8	2.6	0.1	2.3	2.8
6–10 Years	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	466	11.2	1.8	7.7	14.7	2.3	0.5	1.4	3.2	0.7	0.2	0.3	1.0
11 Years and above	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	400	4.3	1.3	1.8	6.8	0.7	0.3	0.2	1.2	0.2	0.1	0.0	0.4
6.Employment																										
Sector of employment																										
Unemployed/ inactive	64	17.8	5.5	6.8	28.7	5.8	2.3	1.3	10.2	2.6	1.3	0.0	5.3	1609	20.3	1.2	17.9	22.7	5.1	0.4	4.3	5.8	1.8	0.2	1.4	2.2
Student	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	229	12.4	2.9	6.7	18.2	2.9	0.8	1.2	4.5	0.8	0.3	0.3	1.4
Agriculture	40	50.6	8.6	33.6	67.5	12.4	2.9	6.7	18.1	4.4	1.4	1.6	7.2	833	47.8	1.9	44.1	51.6	12.0	0.7	10.6	13.4	4.5	0.4	3.7	5.2
Manufacturing	10	34.4	14.8	5.1	63.7	10.3	5.6	-0.8	21.4	4.3	2.6	-0.9	9.5	359	20.2	2.4	15.4	24.9	3.9	0.6	2.7	5.0	1.1	0.3	0.6	1.6
Trading	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99	12.5	3.8	5.1	19.9	2.6	1.0	0.7	4.6	0.9	0.4	0.0	1.7
Service	42	27.9	7.9	12.2	43.5	5.6	1.7	2.3	8.9	1.4	0.5	0.5	2.4	1383	25.2	1.4	22.5	27.8	5.7	0.4	4.9	6.4	1.9	0.2	1.6	2.3
Other	4	24.0	21.4	-18.3	66.3	9.1	8.1	-6.9	25.1	3.4	3.1	-2.6	9.5	161	21.1	3.7	13.9	28.4	4.5	1.0	2.5	6.4	1.3	0.4	0.6	2.1
Basis of salary																										
Unemployed/ inactive	64	17.8	5.5	6.8	28.7	5.8	2.3	1.3	10.2	2.6	1.3	0.0	5.3	1608	20.3	1.2	17.9	22.7	5.1	0.4	4.3	5.8	1.8	0.2	1.4	2.2
Student	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	229	12.4	2.9	6.7	18.2	2.9	0.8	1.2	4.5	0.8	0.3	0.3	1.4
Day-to-day basis	64	47.7	6.8	34.2	61.1	10.5	2.0	6.7	14.4	3.4	0.9	1.6	5.2	1466	45.6	1.4	42.8	48.4	11.1	0.5	10.2	12.1	4.0	0.3	3.5	4.5
Long-term basis	31	7.0	4.8	-2.5	16.5	1.4	1.0	-0.5	3.3	0.3	0.2	-0.1	0.7	1114	11.2	1.2	8.8	13.5	2.0	0.3	1.4	2.5	0.6	0.1	0.4	0.8
Consumption-rate basis	5	58.1	23.3	12.0	104.2	25.2	10.2	5.0	45.5	11.1	4.6	2.0	20.1	256	23.8	3.1	17.6	29.9	5.3	0.9	3.6	7.1	1.7	0.4	1.0	2.4

Table 5: Regions, land ownership, access to facility, and poverty

	Persons with disabilities (Household heads)													Persons without disabilities (Household heads)											
		Based on poverty head count index (P0)				Based on poverty gap index (P1)				Based on severity of poverty index (P2)					Based on poverty head count index (P0)				Based on poverty gap index (P1)				Based on severity of poverty index (P2)			
	Obs.	Estimate	Std. Err	95% Conf.	interval	Estimate	Std. Err	95% Conf.	interval	Estimate	Std. Err	95% Conf.	interval	Obs.	Estimate	Std. Err	95% Conf.	interval	Estimate	Std. Err	95% Conf.	interval	Estimate	Std. Err	95% Conf.	interval
1.All sample	167	28.6	3.9	20.8	36.3	7.4	1.3	4.9	9.9	2.7	0.6	1.5	4.0	4673	26.6	0.8	25.1	28.0	6.3	0.2	5.8	6.8	2.2	0.1	2.0	2.5
2.Regions																										
Urban	52	16.9	5.9	5.2	28.6	2.7	1.2	0.3	5.0	0.8	0.5	−0.2	1.7	1646	8.0	0.8	6.4	9.5	1.5	0.2	1.2	1.9	0.5	0.1	0.3	0.6
Rural	115	33.6	5.0	23.8	43.4	9.5	1.7	6.1	12.8	3.6	0.9	1.9	5.3	3027	35.2	1.0	33.3	37.2	8.5	0.3	7.9	9.2	3.0	0.2	2.7	3.4
Mountains	12	30.7	14.9	1.2	60.1	6.4	3.2	0.0	12.8	1.7	1.1	−0.4	3.7	303	34.4	3.1	28.3	40.5	8.7	1.0	6.7	10.8	3.1	0.5	2.1	4.0
Urban-Kathmandu	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	704	0.6	0.3	0.0	1.3	0.1	0.1	0.0	0.3	0.0	0.0	0.0	0.1
Urban-hills	16	8.1	7.8	−7.2	23.4	2.0	1.9	−1.7	5.6	0.5	0.5	−0.4	1.4	394	8.7	1.7	5.5	12.0	1.8	0.4	1.0	2.7	0.6	0.2	0.2	0.9
Urban-Terai	18	33.7	11.8	10.3	57.0	4.8	2.4	0.1	9.6	1.4	1.1	−0.7	3.6	548	15.5	1.8	12.0	19.0	2.9	0.4	2.0	3.7	0.8	0.2	0.5	1.2
Rural-Hills-eastern	13	39.6	15.4	9.2	70.1	10.6	6.2	−1.7	22.8	4.7	3.0	−1.1	10.6	281	25.5	2.9	19.7	31.2	5.8	0.9	4.1	7.4	1.8	0.4	1.1	2.5
Rural hills-central	14	26.2	12.3	2.0	50.5	7.1	4.5	−1.9	16.0	3.5	2.9	−2.2	9.2	364	32.5	2.8	27.0	38.1	10.2	1.2	7.9	12.4	4.5	0.7	3.2	5.8
Rural hills-western	14	17.6	10.4	−2.9	38.2	4.3	2.5	−0.5	9.2	1.2	0.8	−0.3	2.7	352	29.4	2.8	23.9	34.9	6.1	0.8	4.6	7.6	2.0	0.4	1.2	2.8
[illegible]	16	54.3	13.2	28.2	80.4	15.4	4.5	6.6	24.2	5.2	1.9	1.4	9.0	399	54.7	2.7	49.5	59.9	14.8	1.1	12.8	16.9	5.7	0.6	4.5	6.8
Rural Terai-eastern	12	46.3	15.9	14.9	77.7	12.8	5.0	3.0	22.5	4.0	1.7	0.5	7.4	378	30.1	2.7	24.8	35.4	5.7	0.6	4.4	6.9	1.5	0.2	1.1	1.9
Rural Terai-central	17	27.5	12.2	3.4	51.6	8.3	4.0	0.3	16.3	3.1	1.8	−0.5	6.6	359	29.7	2.8	24.3	35.1	6.0	0.7	4.6	7.4	1.8	0.3	1.2	2.3
Rural Terai-western	6	25.6	18.5	−11.0	62.2	6.5	4.8	−2.9	16.0	1.7	1.2	−0.7	4.1	267	35.8	3.4	29.2	42.5	8.8	1.2	6.5	11.1	3.2	0.6	2.0	4.4
[illegible]	11	31.1	15.3	0.9	61.3	14.1	9.3	−4.3	32.5	8.0	6.3	−4.4	20.4	324	39.8	3.0	33.9	45.8	9.4	1.0	7.4	11.3	3.3	0.5	2.4	4.3
3.Land distribution																										
Landless (0.00 ha)	17	57.0	13.1	31.2	82.7	13.7	4.2	5.5	21.9	4.7	1.8	1.2	8.2	538	29.4	2.2	25.1	33.7	6.8	0.7	5.5	8.1	2.3	0.3	1.7	2.9
Marginal (0.03-0.35 ha)	20	33.7	12.3	9.4	58.0	12.3	6.0	0.4	24.3	6.3	3.8	−1.2	13.7	676	32.9	2.0	29.0	36.9	8.0	0.7	6.7	9.4	3.0	0.4	2.3	3.7
Small (0.35-1.00 ha)	81	31.7	5.8	20.3	43.1	8.1	1.7	4.7	11.4	2.7	0.8	1.2	4.3	2056	33.6	1.2	31.3	35.9	8.3	0.4	7.5	9.0	2.9	0.2	2.5	3.3
Medium (1.00-4.00 ha)	16	21.0	10.5	0.3	41.6	4.4	2.6	−0.7	9.4	1.4	1.1	−0.7	3.5	461	20.6	2.3	16.0	25.1	4.1	0.7	2.7	5.4	1.3	0.3	0.7	2.0
Large (4.00 ha & above)	33	4.7	3.5	−2.2	11.6	0.9	0.7	−0.5	2.3	0.3	0.3	−0.2	0.8	942	4.7	0.9	3.0	6.5	0.9	0.2	0.5	1.4	0.3	0.1	0.1	0.5
4.Access to facilities																										
Road, vehicle, Yes	12	36.7	15.1	6.8	66.6	11.8	5.7	0.5	23.2	5.2	3.5	−1.7	12.0	399	23.3	2.5	18.4	18.4	5.2	0.7	3.7	6.6	1.8	0.3	1.1	2.4
No	155	28.0	4.1	20.0	36.0	7.1	1.3	4.6	9.6	2.6	0.6	1.3	3.8	4274	26.9	0.8	25.3	25.3	6.4	0.3	5.9	6.9	2.3	0.1	2.0	2.5
School, Yes	9	26.7	14.5	−2.0	55.3	4.3	2.8	−1.2	9.8	1.2	0.9	−0.5	2.9	347	18.3	2.4	13.5	23.0	4.7	0.8	3.2	6.2	1.6	0.3	0.9	2.2
No	158	28.7	4.1	20.6	36.8	7.6	1.3	5.0	10.2	2.8	0.7	1.5	4.1	4326	27.2	0.8	25.7	28.7	6.4	0.2	5.9	6.9	2.3	0.1	2.0	2.5
Market Centre, Yes	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	268	18.3	2.4	13.5	23.0	5.1	1.1	3.0	7.2	1.9	0.6	0.8	3.0
No	164	29.1	4.0	21.2	37.0	7.5	1.3	5.0	10.1	2.8	0.6	1.5	4.0	4405	27.2	0.8	25.7	28.7	6.4	0.2	5.9	6.9	2.2	0.1	2.0	2.5
Hospital, Yes	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194	17.1	3.1	11.0	23.2	3.9	1.0	2.0	5.8	1.4	0.5	0.4	2.5
No	161	29.6	4.1	21.6	37.6	7.7	1.3	5.1	10.2	2.8	0.7	1.5	4.1	4479	26.9	0.8	25.4	28.5	6.4	0.2	5.9	6.9	2.3	0.1	2.0	2.5
Electricity, Yes	111	18.3	4.1	10.1	26.4	4.7	1.4	2.0	7.3	1.8	0.8	0.3	3.3	3489	16.4	0.8	14.9	17.9	3.3	0.2	2.9	3.6	1.0	0.1	0.8	1.1
No	55	49.2	7.4	34.6	63.8	12.9	2.4	8.1	17.7	4.5	1.1	2.4	6.7	1184	52.8	1.6	49.7	55.8	14.2	0.6	13.0	15.4	5.5	0.3	4.8	6.1
Piped water, Yes	39	17.1	8.0	1.2	32.9	2.7	1.2	0.3	5.1	0.5	0.2	0.0	0.9	1345	9.0	1.0	7.1	10.9	1.9	0.3	1.4	2.5	0.6	0.1	0.4	0.9
No	128	31.7	4.5	22.8	40.7	8.7	1.6	5.6	11.8	3.3	0.8	1.8	4.9	3328	32.6	0.9	30.8	34.5	7.8	0.3	7.2	8.4	2.8	0.1	2.5	3.1

beyond 42 years. However, poverty indicators are generally similar for all age groups in the case of persons without disabilities. This is possibly because people with disabilities within these age groups are generally still in schooling or are just fresh out of universities and searching for jobs; it is thus likely that they tend to have lower levels of income and consumption.

Row 4 indicates a vast difference in poverty between people with and without disabilities according to ethnicity. In both groups, households of Newar ethnicity are least poor (17.9 and 4.2 percent for persons with and without disabilities, respectively), and households belonging to low castes are the poorest (45.8 and 46.7 percent for persons with and without disabilities, respectively).

One interesting note is that, compared to households from the high or privileged castes, households of Newar ethnicity are richer. This observation might be due to the fact that there is an employment quota for Newar people in the civil service, set by the amended civil act that came into effect after Nepal became a federal republic and the Maoists entered parliament in 2007, so as to increase the access to participation of marginalized people and to keep a balance in a civil service that used to be dominated by high caste hills ethnicities (*Chhetri and Brahmin*). The main target of this amended employment policy is originally to include people such as the lower castes, ethnic minorities and those with disabilities who are economically and socially disadvantaged as well as those who face discrimination. However, Newar people have been also included in this law as beneficiaries despite the fact that they are mostly sound economically, enjoy better schooling, participate in the labor market and engage in trade and commerce.

Moreover, estimated results in row 5 of Table 4 show poverty measures based on the educational status of household heads divided into three groups: with primary education (0-5 years); middle and secondary school education (6-10 years); and higher education (11 years and above). For people with disabilities, results show that those with less than five years of schooling for the household head are the poorest; for this group, poverty incidence is 33.1 percent; poverty gap is 8.6 percent; and severity of poverty is 3.2 percent. Results also showed that household heads receiving middle and secondary or higher education are non-poor, indicating the importance of education beyond primary school for

families to directly increase their income. This, however, does not exclude the possibility that the resourcefulness of a household may facilitate the access to higher education.

For persons without disabilities, there is a 30.3 percent poverty incidence for household heads with primary education, an 11.2 percent of poverty incidence for those with middle and secondary education and a 4.3 percent of poverty incidence for household heads with higher levels of education. These results indicate clearly that education and consumption level are correlated, irrespective of disability status.

Poverty status based on sectors of employment and basis of salary is presented in row 6 of Table 4 for both groups. The results for both groups show that household heads working in the agricultural sector are the poorest. In the agricultural sector, households headed by persons with disabilities have a poverty incidence of 50.6 percent while for people without disabilities, it is slightly lower (47.8 percent). This finding, showing the greater vulnerability of people engaging in the agricultural sector, is consistent with some literature that has elaborated on how most of the world's poor are dependent on the agricultural sector (Schultz, 1980; DFID, 2004).

In all industries (manufacturing, service, etc.), the poverty incidence of households headed by persons without disabilities is lower than households headed by persons with disabilities. The exceptions occur when the household head is unemployed/inactive, a student, or in the trading industry; in these industries, household heads with disabilities have a lower poverty incidence. In particular, when the head of the household is either a student or working in the trading sector, households of persons with disabilities are found to be not poor at all, while the poverty incidence is 12.4 and 12.5 percent for non-disabled counterparts, respectively. The possible explanation is that students with disabilities are generally supported by their families, while those in the trading industry gain higher marginal profit through their business. In the case of the unemployed, they may be doing so voluntarily or receiving other forms of income, as we will discuss in the next paragraph.

In terms of salary received, persons with disabilities who work on the contract/piece-rate basis have the highest poverty incidence (58.1

percent) followed by those working on a day-to-day basis (47.7 percent). Those with household heads who are unemployed or inactive have a relatively lower level of poverty incidence (17.8 percent), suggesting that they may be doing so voluntarily or due to other income sources, such that their unemployment does not pose a significant problem to their daily living. For example, the Disabled Persons Protection and Welfare Act (1982) stipulates that it is within the power of the state to pay a lump sum fund between 10,000 rupees and 100,000 rupees according to the assessed level of disability, and a further 500 rupees of social monthly assistance (MEND, 2010; SSA Website).

Among persons without disabilities, household heads working on a day-to-day basis are the poorest (poverty incidence of 45.6 percent), with those working on a contract/piece-rate basis are the next poorest at 23.8 percent. Regardless of disability status, those working on a long-term basis appear to be least poor, consistent with the fact that long-term jobs have greater income stability than contract or day-to-day jobs and thus these people experience less poverty. This finding can be further linked with Nepal's local situation: there are no social security benefits for persons who work on a contract/piece rate basis or day-to-day basis, whereas those working on a long-term basis in the public sector are entitled to get most of their social security benefits in the form of pensions or provision funds.

Another interesting observation is that among the households with disabilities, the poverty incidence is higher only for those receiving salaries on a day-to-day and contract/piece-rate basis, demonstrating that, in addition to lesser income stability, they face further limitations to opportunities. In contrast, when the household heads with disabilities are unemployed persons, students and those receiving salaries on a longer term, a lower poverty incidence is observed. One possible reason is that, as Lamichhane & Sawada (2013) argue, there are higher returns to education for persons with disabilities, such that those who are educated receive higher earnings in a stable job. For unemployed persons and students, as discussed earlier, a lower poverty incidence could be attributed to factors such as greater support from the state or relatives, but warrants further research for greater clarification.

Row 2 of Table 5 shows the poverty indicators based on different regions. Irrespective of disability status, poverty in rural areas is

generally significantly higher than that in urban areas though figures differ slightly between those with and without disabilities. For persons without disabilities, urban poverty is significantly lower than rural poverty as it is 8 percent in urban and 35.2 percent in rural areas. For persons with disabilities, although the difference is less drastic, rural poverty is still double that of urban poverty, with 16.9 percent in urban areas and 33.6 percent in rural areas.

Poverty incidence, poverty gap and severity are highest in the rural mid-hills and the far western region for both groups (with and without disabilities). P0 is around 54 percent for both groups. Generally, persons without disabilities are found to be poorer in rural areas; the tendency is even more pronounced in the western part of Nepal. However, for persons with disabilities, poverty is lowest in the urban-Terai region (33.7 percent), followed by the rural eastern hills (39.6 percent), the rural eastern Terai (46.29 percent), while it is highest in the rural mid-hills and the far west (54.3 percent). Among the respondents in this study, none of the people with disabilities are found to be poor in the capital of Kathmandu, in contrast to around one percent of their non-disabled counterparts being poor.

Comparing the situation between people with and without disabilities, higher urban poverty was observed among persons with disabilities. Urban poverty for persons with disabilities (P0=16.9) is more than two times higher than their non-disabled counterparts (P0=8.0). The higher cost of living in the city, meaning inadequate or lack of housing and other essential social services, coupled by the limited access that people with disabilities have to employment opportunities and income, as compared to their non-disabled counterparts, might account for higher urban poverty among persons with disabilities (Engbersen, et al., 2006; Baker, 2008).

Row 3 of Table 5 shows the poverty status of household heads according to land ownership. For persons with disabilities, those households who own no land are the poorest and there is a direct relationship between the area of land being owned and the wealth of a household. However, when it comes to those without disabilities, the poorest are not the landless households but those households with small areas of land (0.15 hectares – 1.00 hectares). Having no land or just marginal areas of land may push those groups into finding work as wage earners in other sectors; however, when they have some land (albeit a small area), the

tendency is that the farmers will want to work hard to cultivate their land and they limit themselves solely to working on their own farms. However, due to the use of inefficient traditional technologies, their production processes might suffer from low productivity and decreasing returns to scale. Household heads having medium or large lands are found less poor regardless of the disability status. Since land can be used as collateral for agricultural credit or insurance, households with relatively larger land are likely to be less vulnerable to poverty.

Row 4 of Table 5 shows the poverty status of households based on access to facilities. For both groups, households having access to these facilities are found to be less poor compared to those without access. The findings show that for people with disabilities, households located within 30 minutes' walk to the market center or hospital are found in the non-poor group, while households having access to school are less poor compared to their counterparts having no access to such facilities. In both groups, the poorest households are those with no access to electricity in their houses. Though more than two-thirds of all households have access to electricity, those with no access to electricity in their houses generally reside in remote areas and are found to be among the poorest.

4.2 Factors associated with poverty

Table 6 shows the Ordinary Least Square (OLS) estimates of the factors of poverty. Estimation result shows that for persons with disabilities, per capita consumption is positively correlated with variables such as education (6-10 years and 11 years and above), medium and large land ownership, and access to electricity.

For both groups, per capita consumption is negatively correlated with household size and household heads' engagement in agricultural activities. Household size is negatively correlated with per capita household consumption possibly because the dependency ratio[2] is high in Nepal as the overall dependency ratio of the country is 84.4 percent (CBS, 2011). Some members earn and others share the benefits in living together. We find that for every increase in household member-size, per

2. The conventional dependency ratio is defined as the ratio of population in the 0-14 years age group (young population) and those 60 years and above (old population) to the population in the productive or economically active age group of 15-59 years.

Table 6: Correlations with Poverty

Dependent variable: log (per capita household consumption)						
Variables	Persons with disabilities (Household heads)			Persons without disabilities (Household heads)		
	Coefficient		S.E.	Coefficient		S.E
Household characteristics						
Household size	-0.12	***	0.023	-0.08	***	0.01
Head female	-0.19		0.14	0.08	***	0.02
Rural household	-0.11		0.13	-0.25	***	0.02
Age of head	0.01		0.01	0.01	***	0.001
Head employed in agriculture	-0.3	***	0.1	-0.18	***	0.02
Education						
0-5 years (referent)	-		-	-		-
6-10 years	0.46	***	0.15	0.08	***	0.02
11 years and above	0.29	*	0.14	0.28	***	0.03
Land distribution						
Landless (0.00 ha) (base outcome)	-		-	-		-
Marginal (0.00ha – 0.15 ha)	0.07		0.19	-0.05	*	0.02
Small (0.15ha – 1.00 ha)	-0.02		0.16	-0.04	*	0.02
Medium (1.00ha – 4.00 ha)	0.46	**	0.2	0.17	***	0.03
Large (4.00ha and above)	0.42	**	0.17	0.18	***	0.03
Access						
Electricity	0.44	***	0.1	0.38	***	0.02
Piped water	0.17		0.11	0.29	***	0.02
Market center	0.22		0.34	0.04		0.03
Hospital	-0.05		0.24	0.03		0.04
Road	-0.19		0.17	0.04		0.03
School	-0.11		0.21	0.07	**	0.03
Ethnicity						
High Caste	-		-	-		-
Mongoloids	-0.12		0.11	-0.09	***	0.02
Newar	-0.05		0.18	0.13	***	0.03
Madheshi	-0.22		0.14	-0.15	***	0.23
Low Caste	-0.23		0.15	-0.2	***	0.25
Constant	10.57		0.3	10.47		0.04

capita consumption decreases by 12 percent and 8 percent, respectively, for people with and without disabilities. This suggests that the impact of having a larger family is more significant for the consumption patterns of families consisting of people with disabilities.

As we saw in Table 4, the majority of the poor are engaged in the agricultural sector. If the household head is employed in the agricultural sector, there is 30 percent less per capita consumption in the households of persons with disabilities and 18 percent less per capita consumption in households of persons without disabilities, indicating that agricultural households headed by persons with disabilities are more vulnerable to poverty due to less income and less consumption.

On the other hand, the gender of household head, rural residence, and the age of the household head are significantly correlated with per capita consumption only for persons without disabilities. As for persons with disabilities, rural residence does not have a significant impact while, for those without disabilities, per capita household consumption will decrease by 25 percent if it is a rural household. Results also show that the age of the household head without disabilities is positively correlated to household consumption, suggesting that they have higher disposable income in their later years.

With our eyes turned to education, the positive correlations between education and per capita consumption are high especially for persons with disabilities. Persons having an education of 6-10 years have 46 percent more per capita consumption than persons in other educational groups. The corresponding figure for persons without disabilities is only 8 percent. These figures indicate the possibility that education beyond the primary level is important as a means of reducing poverty among people with disabilities where high returns to education have been discovered by many scholars including Lamichhane and Sawada (2013).

Land ownership is also found to be correlated with household per capita consumption. In both groups, persons having medium and large areas of land have larger per capita consumption than smaller or landless households. The households (with heads without disabilities) having marginal and small tracts of land have less per capita consumption. As we have already discussed above, those who are not land owners can easily seek wage-earning jobs while marginal and small landowners

spend time and effort in cultivating their land and consequently tend to be more susceptible to fluctuations in land output and income.

Many studies (Lawrence, et al. 2002; Pachauri & Spreng, 2004; Kanagawa & Nakata, 2008) show that, regardless of disability status, the access to various facilities is highly associated with income poverty because the lack of access to facilities deprives individuals of opportunities. Our study shows that the access to electricity, piped water and school indeed plays significant roles for persons without disabilities. But for persons with disabilities, only the access to electricity is significant, which seems to indicate the crucial role that information technology plays in increasing various opportunities for the improvement of their lives.

For persons without disabilities, households of Mongoloids or Madheshi ethnicity and lower castes have lower per capita consumption than households from higher castes, while households of Newar ethnicity have higher per capita consumption than households from higher castes. This is probably because, in addition to having higher education, living in urban areas and being mostly engaged in business, they benefit from the quota reservation system for public sector jobs. Low caste households are the most deprived households, having fewer resources and lower levels of both income and consumption.

5. Conclusion

Using the nationally representative NLSS dataset, in this paper, we compare the poverty profile between people with and without disabilities in Nepal and identify correlations between poverty and various aspects of Nepalese households. Regardless of disability status, results indicate that persons living in rural areas, having a lower level of education, having less land and deprived of access to various facilities are poorer. With regard to ethnicity, people in the low castes are the poorest.

With regard to the households headed by persons with disabilities, factors that have been found to be significant in increasing per capita household consumption include education, land assets, the access to electricity and employment in non-agricultural sectors. These findings underscore the importance of human capital formation by education and employment policies as well as the physical assets and infrastructure that broaden opportunities for persons with disabilities.

Finally, it must also be acknowledged that the process of defining disability is a complex one, with data from most developing countries reflecting a lower level of disability prevalence. The lack of involvement of experts in disability studies also implies biases in survey designs, which might skew results. There is thus a need to keep pushing for robust data collection and make governments and agencies identify important disability issues. Any determined attempt to reduce poverty and achieve sustainable development requires a strong political will for development to be made more inclusive, by giving equal footing to the issues of those with disabilities, and mainstreaming disability issues into the post-2015 agenda of inclusive development for all.

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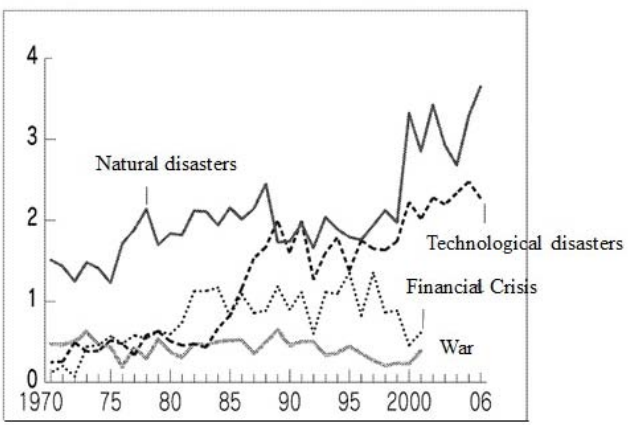
Chapter 7
Resilience and Social Capital

Go Shimada

1. The increasing frequency of disasters and the need for resilience

Typhoon Haiyan, one of the strongest storms ever recorded, swept across the central Philippines with gusts of up to 200mph (320km/h) on November 8, 2013. It has been estimated that the cost of reconstruction become almost US$6 billion. Recent studies have confirmed that over the last two decades there has been an upward trend in the number of such disasters, both in terms of their economic cost and the number of individuals affected by those disasters (Sawada et al. 2011; Hoyois et al. 2007) (see Figure 1).

Figure 1: Frequency of Natural and Man-made Disasters, 1960s-2006



Source: Sawada et al. 2011, 11

Definitions vary as to what constitutes a disaster. The EM-DAT database, put together by the Center for Research on the Epidemiology of Disasters (CRED), includes natural disasters (e.g. geophysical, meteorological and climatological natural disasters) and technological disasters (e.g. the nuclear power plant accident in Fukushima, chemical

spills and transportation accidents). Sawada et al. (2011) also include disasters such as financial crises and wars. Technological disasters, financial crises and wars can all be referred to as 'man-made disasters'. The most vulnerable members of the population, such as the poor, children, the elderly, women and minorities, are usually hit hardest by disasters (Steinberg 2000; Cutter and Emrich 2006; Cutter and Finch 2008). As the frequency of disasters increases rapidly, the need to build social resilience becomes more and more important. There is already evidence that certain neighborhoods in disaster-hit regions recover more quickly than others (Edgington 2010). This chapter focuses on how countries or societies can be resilient to external shocks, such as natural disasters, with particular regard to social capital. The chapter begins with an examination of the concept of resilience.

2. Natural disasters and resilience

In 2005, the World Conference on Disaster Reduction adopted the Hyogo Framework for Action (UNISDR 2005). It focused on building the resilience of nations and communities to disasters. There is growing interest in resilience in the context of post-2015 studies (e.g. UNDP 2013; World Bank 2013; Mitchell et al. 2013) as well as from academics in such fields as psychology, economics, environmental science and civil engineering (Norman 1971; Anthony 1987; Okada 2005; Norris et al. 2008; Longstaff et al. 2010; Guillaumont 2009). The term 'resilience' has been used in different contexts and with slightly different meanings. For example, in the civil engineering field, resilience refers to how quickly physical structures such as buildings and expressways can be returned to their pre-disaster condition. In disaster relief operations, the term refers to how civilian life can be restored. In psychology, it refers to an individual's ability to overcome trauma. In business, it refers to a business continuity plan.

However, even if people use the same terms, their emphasis varies: some people emphasize the role of community (Aldrich 2012; Tatsuki 2007) while others emphasize physical toughening (Dacy and Kunreuther 1969; Fujii 2011). The differences found in proposals on how to achieve an ideal state probably come from different views of the concept of resilience. According to Aldrich (2012), the word resilience derives from

the Latin *resilire*, which means 'to recoil or leap back'.[1] *The Oxford English Dictionary (OED)* defines resilience as: 1) the ability of a substance or object to spring back into shape, elasticity; and 2) the capacity to recover quickly from difficulties; toughness. Hence, there are two important components in the definition of resilience. One is capacity/ability, and the other is outcome/state based on capacity. Almost every definition of resilience includes the factor of capacity. For instance, Norris et al. (2008, 129) define resilience as the "capacity for successful adaptation in the face of disturbance, stress, or adversity". In reviewing several definitions, the main difference lies in the level of outcome. In the case of the *OED*, the outcome is a return to the original shape. The resilience framework (Figure 2) of the United States Multidisciplinary Center for Earthquake Engineering Research (MCEER) is very similar to that of the *OED* in terms of outcome. MCEER defines resilience as the capacity to cope with external shocks and bounce back to the previous state. In the MCEER framework, resilience is a measure of how vulnerability can be minimized (the triangle in Figure 2). To achieve this, the following four 'Rs' are crucial: robustness (inherent strength), redundancy (system properties that allow alternative options), resourcefulness (the capacity to mobilize needed resources) and rapidity (the speed with which disruption can be overcome).[2] Based on the MCEER resilience framework, Hayashi (2012) proposed three steps to strengthen resilience. These are: 1) evaluating the risk in a specific context, 2) preparing for a huge risk and 3) recovering as quickly as possible.

By contrast, the United Nations definition of resilience aims to restore basic functions, but not necessarily to restore the pre-disaster state:

> The ability of a system, community or society exposed to hazards to

1. The genesis of research on resilience differs depending on the academic discipline. In psychology, it dates back to risk studies in the 1970s. Garemezy Norman (1971) studied children with schizophrenic mothers and children with mothers with mental problems (but not schizophrenia). He found that, even when facing this risk, some children were highly adaptive and healthy. This high adaptability was the genesis of resilience studies in psychology. Later, E. James Antony (1987) used the term 'invulnerability' to explore this high adaptability. Psychological resilience has three aspects: competence to endure even under stress; ability to recover from traumatic shock; and ability to overcome inequality, which tends to correlate strongly with risk factors.

2. The Department of Homeland Security (DHS) defines resilience under the following three 'Rs': robustness (maintaining critical operations and functions in the face of crisis); resourcefulness (preparing for, responding to and managing a crisis as it unfolds); and rapid recovery (returning to and/or reconstituting normal operations as quickly and efficiently as possible) (McCreight 2010).

> resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions. (UNISDR 2009)

Here, resilience is defined as the ability of social units (e.g., government, local administrations, organizations and communities) to mitigate disasters and carry out recovery activities in ways that minimize social disruption, while also mitigating the effects of future disasters.

The MCEER definition is very clear about the ideal state to be restored; however, this can be difficult to achieve. Although damaged infrastructure can be rebuilt, it is usually impossible to bring societies or communities back to their original state. Deaths caused by disasters in the community or within families comprise an absolute loss. Human losses are unrecoverable, and cannot be compensated afterwards through any means. Even if the population or economy recovers, the community is no longer the same. For disaster-hit areas, therefore in principle, all activities after a disaster go towards recreating new societies, rather than returning the society to its pre-disaster state.[3]

In this regard, this paper uses the resilience framework (Figure 2), but the vertical axis is not 'quality of infrastructure' but 'functioning of society'. Furthermore, the post-disaster period is divided into two stages: the recovery phase and the reconstruction phase. As discussed above, the capacity of the community is central to the dynamism required to recreate a disaster-hit area. In addition to this engine, there is the need for a direction in which it is to move. This constitutes recovery and reconstruction. This framework includes a reconstruction phase because consideration should also be extended beyond recovery to reconstruction.

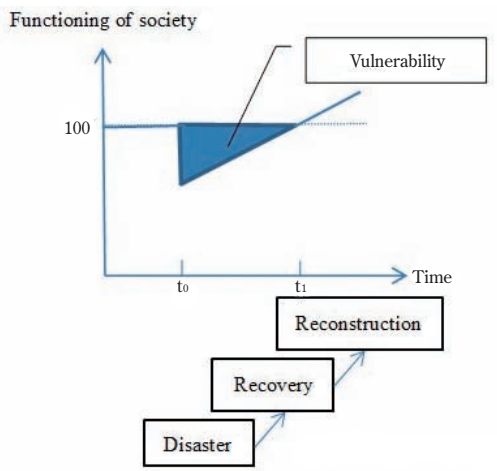
The recovery phase is the short-term period directly after a disaster. This period could last from several months to several years depending on the magnitude of the disaster. Recovery essentially restores the basic functions of society in the best possible way under the circumstances (McCreight 2010). Those who have left the disaster area may then return

3. McCreight (2010: 2) also stated: 'Resilience must be understood to embrace far more than smart mitigation practices, robust emergency response, and effective recovery operations … It means painting a realistic picture of what is required for much more than mere community survival. It must also depict what a fully restored community with essential minimums looks like.'

to live in the area again. One of the important indicators of recovery is population growth. Population recovery is an essential part of disaster recovery (Aldrich 2012; Weil 2010; Davis and Weinstein 2002; Edgington 2010). Vale and Campanella (2005: 12) state that "the numerical resilience of the population may be a reasonable proxy for recovery. For cities that have lost huge percentages of their populations, the restoration of the city as a place of habitation itself is a significant achievement."

However, the reconstruction phase is not simply about restoring basic functions, but about recreating a new and vibrant society. The reconstruction phase is crucial to sustaining recovery and putting economic activities back on track. The core of the reconstruction phase is job creation. Jobs give people an income to spend, and local retailers can start to sell merchandise. As a result, more people return, new residents move in, get jobs and become members of the community. Therefore, population recovery and employment are important cogs in the machine of reconstruction. The reconstruction phase is a mid- to long-term process. However, reconstruction itself is a very difficult task.[4]

Figure 2: Resilience Framework



Modified based on MCEER 2013

4. For example, the Lisbon earthquake of 1755 destroyed the city, which was at the time in the middle of the Age of Discovery. The death toll reached 60,000, and the economy didn't return to its pre-earthquake level.

3. Building resilience: the role of social capital in recovery and reconstruction

How, then, can a country or a society be resilient to external shocks? It is known that certain neighbourhoods in disaster-hit regions recover more quickly than others (Edgington 2010). What, then, are the factors that make the difference, rendering a certain country or society resilient? Social capital, the structure of social relationships, contributes to recovery and reconstruction through the networks and resources available to people as a result of their connections to others. In many cases after disasters, it was observed that tight bonds between relatives and neighbors led to collective action on the part of the community and the efficient allocation of the necessary resources, catalyzing communication to access assistance. A growing number of studies in economics and sociology have discussed the effect of social capital (Shimada forthcoming; Putnam 2000; Putnam et al. 1993; Coleman 1988; Knack and Keefer 1997; Narayan and Pritchett 1997; Sato 2001; Cabinet Office of the Government of Japan 2003, 2005).

As discussed, the important factors of recovery and reconstruction are population recovery and jobs. These two cogs are strengthened by social capital, and the three cogs need to mesh together in the mechanism. Once external shocks hit societies, it can be difficult for governments to provide all the necessary support. Therefore, mutual help within communities is critical in the recovery phase. This mutual help can include physical help (tools, living space and food), or information sharing, financial aid, etc. Information sharing is important in allowing victims to ascertain where support is being provided, and it can provide an important means for governments and non-govermental organizations (NGOs) to reach vulnerable people (e.g. the elderly and disabled) in disaster-affected areas. During the chaotic first phase, matching those in need to the necessary services can be a difficult task. Information provided by the social network in the area may therefore be useful in making this operation more effective. In addition, for those who may have been forced to leave because of a disaster, information on how other community members move can affect their decision on whether to return to the original community or settle down in a new area.

Furthermore, even soon after disasters in the recovery phase, urgently needed information and knowledge on how to address the situation is

usually shared among community members, which enables these members to use scarce resources more efficiently. Stronger social capital encourages more people to participate in community actions. People's collective actions allow them to overcome difficulties that they may be unable to address alone. This is critical in the recovery process. For instance, Nakagawa and Shaw (2004) studied the Mano area of Nagata ward, Kobe after the Great Hanshin Earthquake, and the old town of Buji, Gujarat, in India. They found that the work of NGOs was critical in connecting people to recovery work. They also reported that NGOs or voluntary town organizations catalyzed the interaction between bureaucracy and people, thereby fostering trust and facilitating a smoother recovery. This kind of social capital helps people to participate in the community, and to remain in the community or return to their original area. On the other hand, if people move to other places and are isolated from the network, they will feel more inclined to move to a completely new area.

In the following reconstruction phase, the central issues are often chronic problems that the community faced even before the disaster, but which have been amplified by the disaster. Social capital promotes job matching, thereby reducing the asymmetry of information, which is common in labor markets. In post-disaster situations, it can be difficult to match actual jobs with the labor available. For employers, it may not be easy to find somebody suitable due to the difficulties in obtaining references, since it is difficult to get accurate information on job applicants' capacity or human capital. Studying the United States labor market, Granovetter (1974) found that social networks raised the efficiency of the job matching process, and sped up the job search for workers. Put more simply, information in the form of personal recommendations can address the asymmetry of information and catalyze job matching.

Social capital also creates jobs by promoting small and medium sized enterprises, with social capital helping to reduce transaction costs, as Coase (1937) pointed out. According to Stiglitz (2000), these transaction costs include informational costs as well (Shimada 2013a). If people can trust their business counterparts, then they can avoid certain negotiations and paperwork. This is particularly important because in many cases after disasters, business relationships may have deteriorated and each company needs to find new business partners and clients.

4. Conclusion

Until the 1990s, vulnerability was the main concept used to address disaster prevention. There were a number of serious natural disasters in South America, and recovery was difficult. The cause of these difficulties was thought to be social vulnerabilities such as poverty, lack of training, limited access, and education. The image of the vulnerable is that of being a powerless and passive poor, an image that is not positive. By contrast with the concept of vulnerability, the idea of resilience gives these people and communities a more positive role.[5] As this paper has discussed, along with population recovery and jobs, social capital is a key factor in making resilient societies,. As natural disasters have been increasing, the international community needs to work collectively to make societies more resilient for the future.

5. Although their emphases are different, this does not necessarily mean that the concepts of vulnerability and resilience are mutually exclusive (Mitchell et al. 2013; Room 2000; Wood 2003).

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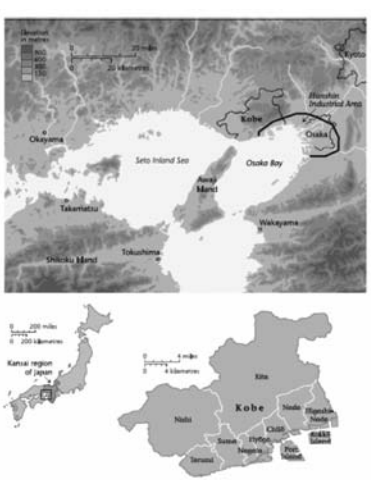
Chapter 8
A Quantitative Study of Social Capital in the Tertiary Sector of Kobe: Has Social Capital Promoted Economic Reconstruction Since the Great Hanshin Awaji Earthquake?

Go Shimada

1. Introduction

At 05:46 on January 17, 1995, a powerful earthquake (magnitude 7.3) occurred in the Kobe region, killing 6,434 people and destroying more than 200,000 homes. Soon after the disaster, the rebuilding effort for the 3 million victims began. A total of 1.2 million volunteers came to assist the victims. This was the first major earthquake to hit an urban area in modern times in Japan since the Tokyo Earthquake (Great Kanto Earthquake) of 1923. It is estimated that the cost of the damage to the area's industry was around 5 trillion yen, of which direct damage to business property and equipment accounted for half, while indirect damage such as business closures accounted for the rest (Kuramochi 1997).

Figure 1. Map of Kobe



(Source: adopted from Edington (2010), originally from Fujimori (1980))

Eighteen years have passed since the earthquake. Has Kobe fully recovered from the earthquake and rebuilt its economy? How should we assess its reconstruction? If it has been reconstructed, what factors contributed to the process? The objective of this paper is to revisit the experience of the Great Hanshin Awaji Earthquake.

1. Eighteen years after the disaster: has kobe recovered and reconstructed?

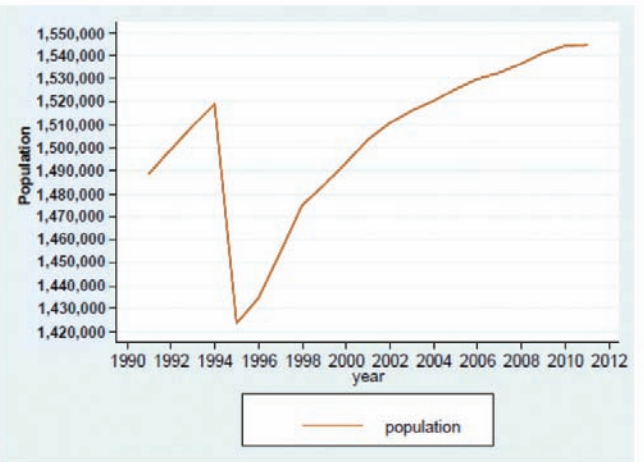
Has Kobe fully recovered from the earthquake 18 years ago? This is a question difficult to answer in one word. Let us look at Kobe from the viewpoint of the resilience framework presented in the last chapter (Norman 1971; Anthony 1987; Okada 2005; Norris et al. 2008; Longstaff et al. 2010; Guillaumont 2009).

As indices for recovery and reconstruction, this paper focuses on population growth and employment because these are the most important factors of recovery and reconstruction, respectively. As we will see, one of the immediate impacts of disaster is on the population. People move out from the affected area. There are two types of these people. The first is those who evacuate to temporary housing or relatives' houses; and as it takes time to reconstruct their house and work place, some of them are forced to start a new life, getting a job in a new place. Then, in many cases, people decide to stay at the new place rather than go back as they have their new job, and their children go to a new school nearby with new friends. As time goes by, the chance to go back decreases. This is what happened in Kobe. The second is people who move out from the affected area to avoid possible future disasters that could strike again. Sometimes people just move to a new home and stay in the same job, but some people find another job in another location.

Here, the job is the key to people's movement in the mid- and long-term reconstruction phase. Population growth and job are inseparable. Jobs give income for people to spend, and then local stores can start to sell products. These two cogs are especially important in the phase of reconstruction beyond recovery, without this mechanism, no economy will be able to succeed in either recovery or reconstruction. Since this paper will focus on the reconstruction phase, we will focus on employment in Kobe.

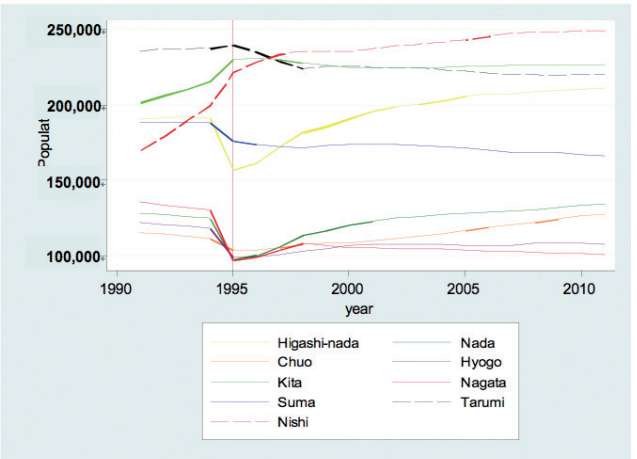
The population of Kobe declined drastically the year the disaster occurred. Compared with the previous year, the population declined by around 95,000 inhabitants. In this figure were the 6,434 people killed in the earthquake; the rest, around 85,000, moved out from Kobe. As the years went by, the population gradually returned. In 2004, almost a decade after the earthquake, the population of Kobe recovered to its pre-disaster level (fig. 2). However, ward by ward data shows a different picture (fig. 3). As the map of Kobe shows there are nine wards in Kobe (fig. 1 on p. 159). Among the nine wards, the eastern parts of the coastal wards were severely damaged (Higashi-nada, Nada, Chuo, Hyogo, and Nagata), while the western parts of the coastal wards and mountainous wards were relatively less affected (Suma, Tarumi Nishi and Kita). There is a stark difference in the death toll ratio between the two groups (Table 1). What are the factors contributing to this difference among the wards of Kobe?

Figure 2. Population of Kobe



(Made by this author based on statistics of the city of Kobe (2013))

Figure 3: Population of Kobe by Ward



(Made by this author based on statistics of the city of Kobe (2013))

Table 1: Death toll by wards

	Death toll	Population	Death toll ratio (Death toll/population)
Higashi-nada	1,471	157,599	0.933
Nada	933	97,473	0.957
Chuo	244	103,711	0.235
Hyogo	555	98,856	0.561
Nagata	919	96,807	0.949
Suma	401	176,507	0.227
Tarumi	25	240,203	0.010
Nishi	11	222,163	0.005
Kita	12	230,473	0.005

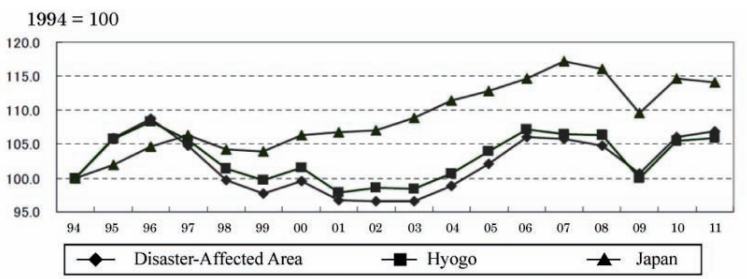
(Made by this author based on statistics of the city of Kobe (2013))

So, does the magnitude of damage affect population growth trends after the disaster? As Figure 3 shows, in terms of the population trend, the wards of Kobe can be categorized into four types: (1) population declined after the earthquake, but bounced back well (Higashi-nada, Nada, Chuo);

(2) population declined after the earthquake, and continued to decline (Nagata); (3) population decline was small (in other words, damage was small) at the time of the earthquake, but population continued to decline (Suma, Tarumi); and (4) almost no impact (Kita, Nishi). Hence, the population growth trend after the disaster has nothing to do with the impact of the disaster. Nishi and Kita wards were less affected, so it is natural for people to move to these wards. However, even though Tarumi was affected less than other wards, its population continues to decline. The wards in the first category were hit harder, but the population growth after the earthquake was much faster than in the other wards. In other words, the recovery situation is mixed. It is not easy to say in one ward if Kobe has recovered or not because of this mixed picture.

So, how was economic recovery of Kobe? Figure 4 shows that after the earthquake its economy quickly improved mostly because of the investment in reconstruction. However, the economic trend soon reversed and declined in terms of gross output. Further, the gap between Kobe and the rest of Japan widened until 2003.[1] After 2004, the economic trend in Kobe equaled that of the rest of Japan, but still hasn't totally 'filled the gap.' Gross output had also recovered to its pre-disaster level in 2004, the same as the population. This overall picture, however, needs to be looked at in more detail industry by industry.[2]

Figure 4. Time-series data on gross output



Source: Hyogo 2013

Figures 5 and 6 show the share of the working population in secondary and tertiary sectors, respectively. It is very clear that after the disaster,

1. The data show that the trend in Hyogo Prefecture, to which Kobe belongs, is similar to that of Kobe. This is probably because most of the prefecture's economic activity is concentrated in Kobe.

2. Beniya, Hokugo and Murosaki (2007) analyzed local industries such as the artificial leather shoes industry cluster, and concluded that the industry of Kobe had not yet fully recovered.

there was a working population shift from the secondary sector to the tertiary sector. The secondary sector has not recovered to the pre-disaster level. The drop is especially steep in Nagata Ward, where a huge number of small factories producing artificial leather shoes were traditionally located, as an industrial cluster. According to Yamaguchi (2013), before the earthquake, there were around 450 shoe manufacturers and around 1,680 related companies employing 15,000 people. The earthquake completely or partially destroyed 90% of those companies. The loss from the earthquake was estimated at 300 billion yen (Seki and Ohashi 2001). So, the impact was huge. Part of the reason for the loss was due to fires after the earthquake. The artificial leather shoes factories use chemicals such as paint thinner, which is highly flammable. According to the Japan Chemical Shoes Industry Association, it is reported that sales of the associated companies had dropped from 70 billion yen to around 45 billion yen, and employment from 6,500 people to below 3,000 in 2010.

Figure 5. Percentage of the working population in secondary industries

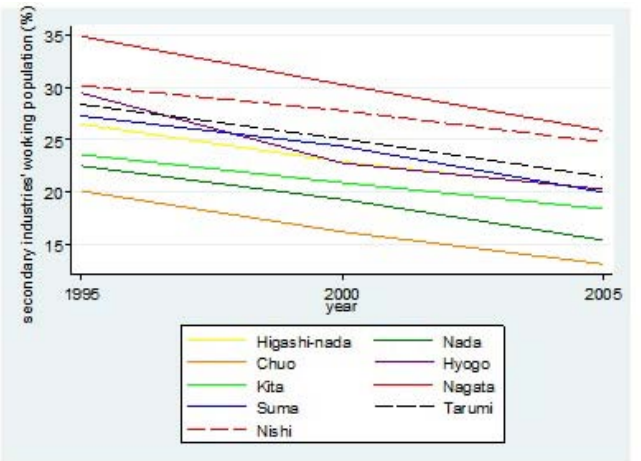
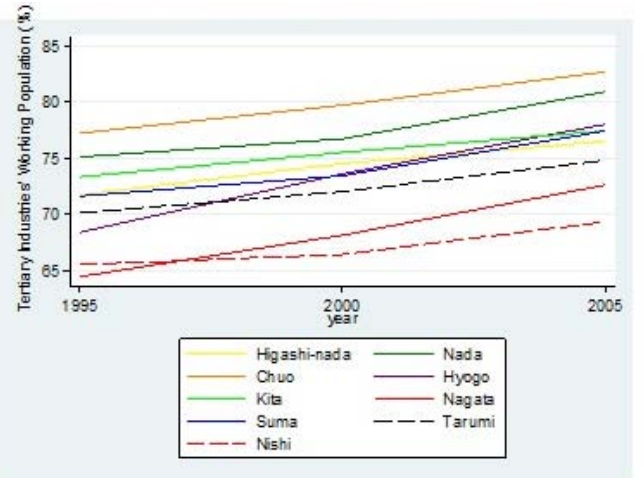


Figure 6. Percentage of the working population in tertiary industries



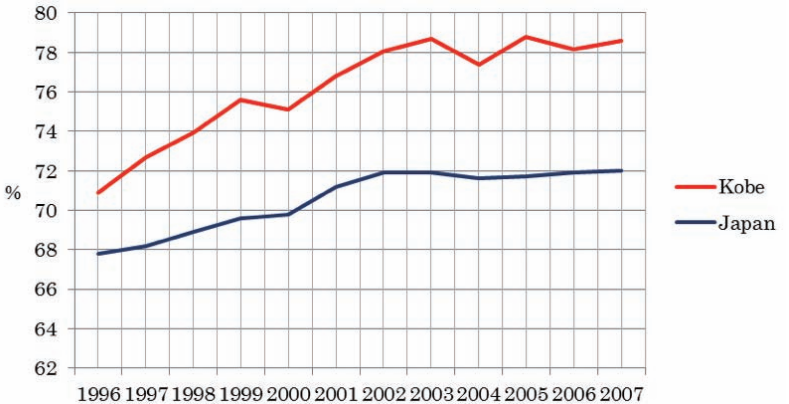
On the other hand, the tertiary sector recovered well and in most wards the number of people working in this sector has increased beyond pre-disaster levels. According to the statistics of the city of Kobe (2006 and 2009), the medical and welfare industries, and education support and service sectors have grown rapidly both in the number of offices and employment.[3] In terms of employment, the tertiary industry accounted for 83.5% of total employment in 2006.[4] As of 2012, the medical and welfare industry alone employed 13% (93,618 people) of those employed in Kobe.

This shift of industrial structure to tertiary industry is significant compared with the overall figure for Japan (fig. 7). As the figure shows, the tertiary industry of Kobe has expanded rapidly since 1996, moving from 70.8% to 78% in 2009 compared with the rate of expansion for Japan overall. One important aspect is that in the case of Kobe, the expansion is largely the first 8 years (1996 – 2003) after the earthquake in 1995.

3. The number of those employed in the manufacturing industry declined.

4. It is 0.1% and 16.4% for the primary industry and secondary industry, respectively.

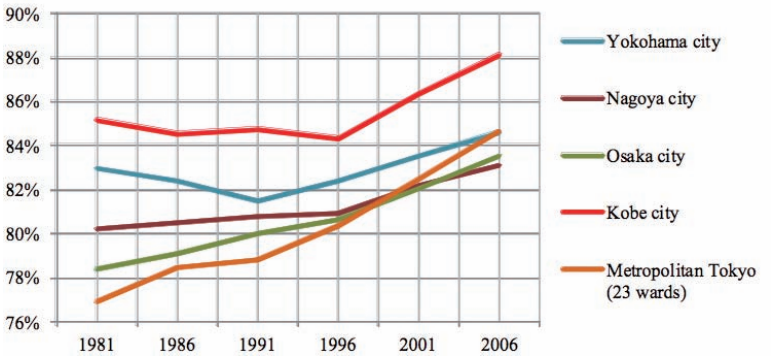
Figure 7. Industrial structure of Kobe



(By this author based on the database of the city of Kobe 2013)

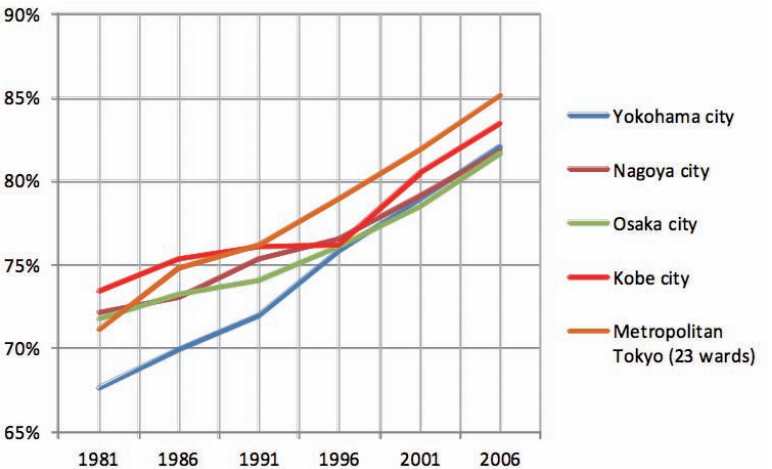
Now, let us look at the third tertiary sector of Kobe in comparison with other major urban cities of Japan. Figure 8 shows the ratio of tertiary sector offices among all industries. The ratio of Kobe has been high compared with other major cities, but the ratio was declined slightly before the earthquake. This trend suddenly changed after the earthquake, rapidly turning to an upward trend. The same is true for the ratio of employees working in the tertiary sector (fig. 9). The trends among major cities have been the same. In the case of Kobe, the trend was slightly different from other cities. The ratio is higher compared with other major cities excluding the Tokyo metropolitan area, but before the earthquake it became flat. After the earthquake, the trend has regained its momentum and became steeper than other cities. As we have discussed, it would be reasonable to say that in Kobe the tertiary sector was the driver of economic recovery.

Figure 8. Ratio of tertiary sector offices



(By this author based on the database of the government of Japan 2013b)

Figure 9. Ratio of tertiary sector employees



(By this author based on the database of the government of Japan 2013b)

One of the reasons for the development of the tertiary sector is the Kobe Bio-medical Innovation Cluster (KBIC) in Port Island. So far, more than 220 companies have invested in KBIC. KBIC was initiated by the city of Kobe in 1998 soon after the earthquake as a part of the recovery plan. Once the cluster developed, the economic effects spilt over to related industries, employing more people in those industries. Then, as the population grew, business opportunities increased for small businesses such as retail shops and restaurants. This dynamic process of development will have a huge economic impact through multiplier effects.

Furthermore, another aspect upon which the city of Kobe focused was community business, providing public support to those who initiate the initiatives. Community business has become active with the help of public intervention (Ozawa 2000). Many successful cases have been reported such as TOR-Road Town Planning Corporation (which utilizes vacant stores for glassware sales as well as town planning consultation), and Hyogo Transfer Service Network (which helps disabled and senior people to move).

Aside from these sub-sectors, attention needs to be paid to the fact that according to the economic census of Kobe in 2009, more than 90% of offices in Kobe employ less than 20 workers. In other words, SMEs are the driver of economic reconstruction, providing jobs through multiplier effects.

As we have seen, the data show a mixed picture of recovery and reconstruction among sectors. This is why it is difficult to say in one word whether Kobe has recovered or not as the situation in each ward and sector is different. As we discussed, after the earthquake, a structural change in industry occurred, shifting from the secondary industry to the tertiary industry. This paper focuses on the tertiary sector. How does social capital play a role in promoting the sector?

2. Literature review

There is a vast amount of literature dedicated to post-earthquake Kobe (Horwich 2000; Seki and Ohashi 2001; Hayashi 2011; Hayashi (eds) 2011; Sawada and Shimizutani 2008; Aldrich 2011; Edington 2010; Shibanai 2007).

One of the characteristics of the post-Great Hansin Awaji Earthquake discourse was the emphasis on social capital. The city of Kobe formed the Social Capital Study Group in 2006, inviting social scientists as advisors, and they published a report just before the Great East Japan Earthquake. The Study Group organized a workshop among stakeholders, and studied the Mano area, a downtown section with a residential area and an artificial leather shoes industrial cluster, and the northern part of Noda in Kobe's Nagata Ward. The report found that the community was a catalyst between the city administration and residents, which is critical in the process of recovery. Further, it concluded that the community functioned well even before the earthquake, and people actively participated in the reconstruction process.

From the Study Group, a number of articles were published on social capital in the city of Kobe, such as Shibanai (2007) and Tatsuki (2005, 2007). The former uses elementary school areas as the unit for social capital, which seems to be a useful alternative to disaggregate prefectural data since much of the community effort centers on elementary schools in Japan. The latter proposed the Seven Elements Model of life recovery for the Kobe earthquake. These seven elements are: housing, social ties, townscape, physical/mental health, preparedness, economic/financial situation, and relation to government. Tatsuki (2005, 2007) found that these seven critical elements accounted for nearly 60% of the life recovery variance. Nakagawa and Shaw (2004) also studied the Mano area and found that a community with social capital records the highest satisfaction rate for new town planning and has the speediest recovery rate. Aldrich (2011) employed econometric analysis to study the impact of social capital for population growth and found out that the amount of social capital (measured by NPOs (Nonprofit Organizations) created per capita) most strongly determines recovery rates.

As we have seen, a great number of studies have been carried out on social capital and recovery in Kobe in the post-disaster phase. What seems to be lacking, however, is analysis of the mid- and long-term reconstruction phase. Social capital is considered to promote the start of business (Nam, Sonobe, and Otsuka 2010; Todo, et al. 2013).[5] There are four causal relations (Table 2). These are: 1) job matching; 2) business information and technology transfer; 3) provide access to distant markets; and 4) transaction cost reduction. The issues in the reconstruction phase are chronic problems the community faced even before disasters, but that have been amplified by disasters, rather than the acute external shock itself. As discussed before, jobs are the important factor for reconstruction.

5. The benefit of accumulation is not confined to the manufacturing sector, but can be applied to the service sector as well. Shopping streets are one particular case. After the Great East Japan Earthquake, where to re-open stores in the tsunami-affected area became an issue. There is no point in opening a store that is isolated from other stores. They cannot return to their original location; however, it has taken a long time to decide where communities should be moved and where offices should be established. So, it is difficult to decide on where shopping streets should be located.

Table 2. Social capital in post-disaster application (in the reconstruction phase)

Broad Mechanism	Post-Disaster Application
Strong social capital provides information, knowledge, and access to members of the network (decreases asymmetry of information)	Social capital promotes job matching between employer and employee, reducing asymmetry of information.
	Social capital promotes knowledge transfer among networks (e.g., technology and business information) to make industrial clusters more competitive
	Social capital provides access to distant markets.
Strong ties create trust among network members (decreases transaction costs)	Strong social capital reduces transaction costs among neighbors and private sector activities.

(Source: by this author)

In the four causal relationships, two common factors are crucial. One is to decrease asymmetry of information. Under this condition, it is known that the market fails and investment becomes less than the desirable level (underinvestment) (Dasgupta and Stiglitz, 1988; Stiglitz 2010 and 2012). Social capital complements this market failure. As an entrepreneur gets more information from a social network, it decreases the asymmetry of information, and, therefore, promotes investment.

Asymmetry of information is common in labor markets as well. In this situation, it is difficult to match actual jobs with the labor available. For the employer, it is not easy to find somebody suitable through terms of reference since it is difficult to get accurate information on job applicants' capacity or human capital. Studying the US labor market, Granovetter (1974) found that social networks raised the efficiency of the job matching process, and sped up the job search for workers. Put more simply, information in the form of personal recommendation addresses the asymmetry of information and catalyzes job matching.

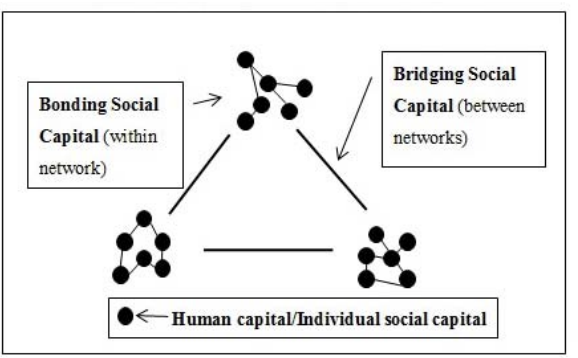
The other is to promote knowledge transfer among networks to make industrial clusters more competitive (Inkpen and Tsang 2005; Urata and Itoh 1994). It is known from Otsuka and Sonobe (2011a) and related various empirical studies (Sonobe, Suzuki, and Otsuka 2011; Kuchiki and Tsuji 2008) that without introducing new ideas and knowledge, industrial clusters never sustainably grow.

3. Testable hypothesis

In social capital literature, the concept has been categorized into two types: bonding and bridging (Narayan 1999) (fig. 10). The bonding is a network binding a community together (e.g., family, neighborhood). The bridging is characterized by the heterogeneity of membership and openness to others. In other words, it is a network between bonding networks.

There are negative as well as positive aspects. The same social capital that gives the members privileged access to certain resources could exclude non-members from access (Portes 1998, Arrow 2000).[6] Social capital promotes, as discussed in the last section, knowledge transfer, reducing the transaction cost of the market. On the other hand, it could exclude others. It is well known that the FDNY (the Fire Department of the City of New York) is dominated by Italian Americans, and the diamond trade in New York is dominated by Jewish dealers. The mafia and the caste system in certain parts of south Asia are extreme examples. It is possible to have high bonding social capital (by which members help each other), but a lack of bridging social capital (the exclusion of members of other social groups). This is particularly true for bonding social capital. It could end up with nepotism and crony capitalism, which causes market failure and hampers the healthy development of the private sector and employment growth.

Figure 10. Bonding and bridging social capital



(Modified by this author based on Aldrich (2012))

6. Arrow (2000: 3) stated that: '….social interactions can have negative as well as positive effects….Good behaviour spreads; so does bad.'

To translate these arguments into a testable hypothesis, this paper postulates the following hypothesis:

Hypothesis: Both bonding and bridging aspects of social capital promote reconstruction promoting business and growth of employment.

4. Methodology

To test the above hypotheses, this paper employs the following equation. The dependent variable is the employment growth rate in the tertiary industry ($Emp_{i,t}$), where i and t denote ward and time, respectively. This variable is chosen because employment is the most suitable index for the mid- and long-term reconstruction phases.

$$\triangle Emp_{i,t} = \alpha + \beta \triangle Emp_{i,t-1} + \gamma_0 SC_{i,t} + \gamma_1 HC_{i,t} + \gamma_2 \triangle population\_growth_{i,t} + \varepsilon_{i,t}$$

Following the New Keynesian Phillips Curve (NKPC) literature (Taylor 1979; Calvo 1983), in the labor market, wages, prices and employment levels are assumed to be volatile, and adjustment to market equilibrium is gradual. This assumption is appropriate to Japan's labor market, where lifetime employment is common. This assumption is different from that of the neo-classical Phillips curve. Therefore, the equation contains lagged $Emp_{i,t}$. The model with a lagged Y variable is known as an autoregressive model (Beck and Katz 2009).

$SC_{i,t}$ is the social capital variable, and $HC_{i,t}$ is human capital. As the social capital variable, the following three proxy variables will be used. The possible proxies to be used from past literature are as follows: PTA (Putnam 2001; Coleman 1988); Living arrangements with parents, intensity of interactions with parents (Teachman, Paasch and Carver 1997); crime rate (Putnam 2001); and newspaper reading (Putnam 1996) among others. Due to the limited availability of data, this chapter uses the following proxies. The proxy for bridging social capital is 'crime rate' and 'the number of community centers,' and that of bonding is 'number of households with three generations living together (=number of households with three generations/number of all household members in a ward).'

Table 3. Variables for bridging and bonding social capital

Bridging	Bonding
-Crime rate	-Households with three generations living together

The crime rate is selected because communities with high social capital are considered to have a lower crime rate (Putnam 2001; Akcomak and Weel 2008; Buonanno, Montolio and Vanin 2009; Deller and Deller 2010). The study conducted by the Cabinet Office of the Government of Japan (2003) also uses crime rate as a proxy for social capital. In a community with high social capital, members feel they have a responsibility for the security of the neighborhood to protect their families. They organize community meetings, walking patrols, and inform the police if they have spotted any suspicious individuals (Aldrich 2012). Coleman (1988: S104) stated that 'effective norms that inhibit crime make it possible to walk freely outside at night.' Without tight community control, it would be difficult for parents to send their children to play outside. Here, a ward is a gathering of small communities. Since the crime rate is lowered by the collective effort of communities, it is regarded as a bridging form of social capital.

As a bonding social capital (within a network), this paper will use the number of households with three generations living together because those households are considered to have strong family ties, and provide a social safety net. Recently, Abe (2013) conducted a comprehensive study on Japan's poor in 2007 and 2010, and found that household structure is a very important factor behind poverty. According to her study, among all households, the poverty rate is highest in households with a single parent and children, followed by households of a single old person. On the contrary, households with three generations living together are the lowest in terms of poverty rate. This is because in households with three generations living together, household members help each other. In other words, the social safety net is rich in these households. This is a clear example of bonding social capital. As discussed, however, even if the benefit within the network is strong this does not necessarily mean the benefit is shared outside the network.

$population\ growth_{i,t}$ is the rate of population growth. Population growth and employment are considered to be closely associated. The causality is not one way, but is probably two ways. People will come back to the area where

there are employment opportunities. At the same time, if people move in, the need for various consumer products and goods increases. This creates good business opportunities for SMEs, increasing demand for labor. $disaster_{i,t}$ is the variable relating to damage caused by the disaster. Here, we will use the death toll rate (= death toll number/population).
This paper used the standard panel estimation (random effects (RE); fixed effects (FE); pooling cross section across time), Prais-Winsten estimation and system GMM (Generalized Method of Moments). Since this model is a dynamic model containing a lagged dependent variable in the right hand of the equation, this paper uses a Prais-Winsten estimation to ensure the findings. Prais-Winsten is a method of multiple linear regression with AR (1) and exogenous explanatory variables. The Prais-Winsten standard errors account for serial correlation, which the RE, FE and pooling estimations do not.

The system GMM is used to tackle other possible biases by endogeneity and omitted variables in addition to the bias caused by the lagged dependent variable. In our system GMM estimation, all regressors are considered to be endogenous. Arellano and Bond (1991) first established the 'difference-GMM' estimator for dynamic panels (Roodman, 2003). Arellano and Bond's estimation starts by transforming all regressors via differencing, and uses the GMM. This method regards lagged dependent variables as not exogenous but predetermined. A problem with the original Arellano-Bond difference-GMM estimator is that if there is an issue of a random walk of endogenous variables, the estimation becomes a biased coefficient estimation.

To tackle the above problem, Blundell and Bond (1998) articulated an improvement on augmented difference GMM by Arrelano and Bover (1995), adding more assumptions that first differences of instrument variables are uncorrelated with the fixed effects, allowing more instruments to be introduced and making them exogenous to the fixed effects. The augmented estimator is called "system GMM." The STATA command *xtabond2* implements both estimations.

The major advantage of the system-GMM estimation, compared with the difference-GMM, is that it effectively controls autocorrelation and heteroskedasticity. This chapter uses one-step estimation, and implements the Hansen test and Sargan test for joint validity of the instruments, and also implements the AR test for autocorrelation.

5. Data

For the empirical study, this paper uses the variables listed in Table 4. The database is unbalanced panel data, covering all 9 wards of Kobe from 1995 to 2010, with some gaps. These data are from the existing data of the city of Kobe (2006; 2012; and 2013) and census data of the government of Japan (2013). There are two types of data on households with three generations living together. Both are population rate. One is the number of members of the household, and the other is the number of households. This is just to double check the findings. Regarding crime rate, the data on crime is the number of offences such as murder, robbery, and rape. It does not include a number of minor offences and traffic accidents. The population rate of university graduates is human capital proxy, and the university graduates number is divided by population.

Table 4. Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Employment growth rate in tertiary industry	36	1.022868	14.42606	-27.88066	49.23398
Population Growth Rate	36	1.305278	12.75325	-29.28	40.1
Share of members of households with three generations living together	36	3.679265	1.647733	1.366254	7.535136
Share of households with three generations living together	36	7.318844	2.6601	3.576982	13.6769
Crime Rate	27	0.0228495	0.0152815	0.0091299	0.0729566
Population rate of graduats from universities	18	15.9988	4.502186	8.613366	25.93723

6. Estimation results

Tables 5 and 6 show estimation results. Models 1 to 4 of Table 5 show that the share of members of households with three generations living together becomes significantly positive. Further, the human capital variable (graduates from university) also becomes positive. To double check the importance of social capital, this paper also used the share of households with three generations living together (Models 5 to 8). In these models, to increase N, human capital variable (graduates from

universities) is excluded. The ward by ward data on graduates from universities is collected once every ten years. The results of these models confirm the same results. The lagged growth rate in employment in the tertiary industry becomes negative. This is probably because the demand for labor will decrease against the labor demand in the last term, according to the diminishing marginal returns for labor. Among standard panel estimations, pooling is a better method than random effect and fixed effect, judging from the results of the Hausman test, F-test, and Breusch and Pagan. The population growth rate is also positive in all estimations.

Then, this paper checked the effects of crime rate. Models 9 and 10 did not become statistically significant by RE and pooling estimations. Models 11 and 12 of Table 6 show that the crime rate is negatively correlated with unemployment and statistically significant by Prais-Winsten. In other words, if the crime rate is lower thanks to high social capital, then it has positive impacts on employment.

Finally, considering the possible endogeneity and omitted variables biases, Model 13 checked the results with the system-GMM (one step). The results also confirmed that both households with three generations living together and crime rate became significant. Hence, regarding the social capital variable, we would be able to say that these are robust results. Therefore, the results are concordant with the hypotheses on bonding (number of members of households with three generation living together) and bridging (represented by crime rate), which were proved to be statistically significant.

Table 5. Estimation results 1 (Dependent variable: Employment growth rate in tertiary industry)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	FE	RE	pooling	Prais-Winsten	FE	RE	pooling	Prais-Winsten
Employment growth rate in tertiary industry (lagged)	-0.1258 [-1.27]	-0.2827 [-2.88]***	-0.2827 [-2.88]***	-0.2828 [-2.98]**	-0.0748 [-1.28]	-0.0454 [-1.05]	-0.0454 [-1.05]	-0.061 [-1.45]
Population growth	1.0167 [6.27]***	0.9007 [6.08]***	0.9007 [6.08]***	0.8978 [6.25]***	1.001 [5.40]***	1.1604 [11.84]***	1.1604 [11.84]***	1.1762 [14.81]***
Share of households with three generations living together					4.1397 [3.62]***	1.5247 [3.57]***	1.5247 [3.57]***	1.4519 [4.46]***
Share of members of households with three generations living together	2.6208 [1.80]	1.6006 [4.98]***	1.6006 [4.98]***	1.6155 [6.52]***				
Population rate of graduates from university	0.0944 [0.07]	0.465 [2.00]**	0.465 [2.00]**	0.4777 [2.09]*				
_cons	-21.8751 [-0.69]	-20.6893 [-4.05]***	-20.6893 [-4.05]***	-20.9307 [-4.30]***	-15.4135 [-4.16]***	-6.9821 [-4.25]***	-6.9821 [-4.25]***	-6.4107 [-5.10]***
N	18	18	18	18	27	27	27	27
R-squared	0.9828	0.9491		1	0.8898			0.9009
Adj-R-squared	0.8762	0.9415		1	0.809			0.888
F test	F(8, 5) = 2.23 Prob > F = 0.1961				F(8, 15) =1.29 Prob > F = 0.3179			
Breusch and Pagan Lagrangian multiplier test for random effects	chibar2(01) = 0.00 Prob > chibar2 = 1.0000				chibar2(01) = 0.00 Prob > chibar2 = 1.0000			
Hausman Test	chi2(4) =27.37 Prob>chi2 = 0.0000				chi2(3) = 5.29 Prob>chi2 = 0.151			

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

Table 6. Estimation results 2 (Dependent variable: Employment growth rate in tertiary industry)

	Model 9	Model 10	Model 11	Model 12	Model
	RE	pooling	Prais-Winsten	Prais-Winsten	System GMM
Employment growth rate in tertiary industry (lagged)	-0.0394 [-0.89]	-0.0394 [-0.89]	-0.072 [-1.71]	-0.0007 [-0.02]	-0.0276 [-1.03]
Population growth	1.1478 [11.20]***	1.1478 [11.20]***	1.2018 [15.89]***	1.1005 [18.03]***	1.1193 [11.93]***
Crime rate	-1.4083 [-0.03]	-1.4083 [-0.03]	-60.7822 [-2.02]*	-74.9522 [-3.21]***	-89.5034 [-4.94]***
Share of members of households with three generations living together	0.8926 [3.26]***	0.8926 [3.26]***	0.7153 [3.98]***		0.1401 [2.09]**
Growth rate of members of households with three generations living together				0.3542 [5.76]***	
_cons	-7.8562 [-3.17]***	-7.8562 [-3.17]***	-4.834 [-2.95]***	-30.481 [-5.53]***	
N	27	27	27	27	27
R-squared			0.9174	0.9475	
Adj-R-squared			0.9023	0.9379	
Hansen test					0.999
Sargan test					0.386
Arellano-Bond statistic					0.415

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

7. Conclusions

Our analysis of employment in the tertiary industry of Kobe after the earthquake proves that social capital is an important factor for employment. Furthermore, we disaggregated aspects of social capital into bonding and bridging in order to analyze the data, and empirical studies proved the hypothesis to be correct.

In Tohoku, people have been forced to leave their communities because of the tsunami and the Fukushima nuclear plant accident (destruction of social capital), so the question of how to re-strengthen bridging as well as bonding social capital will be key to recover and reconstruction. This paper provides hints for the on-going debate on how to rebuild Tohoku.

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ISBN:978-4-86357-061-0