

Understanding Social Capital in Response to Floods and Droughts

*Ang Sopha, Oeur Il, and John McAndrew explore the role of social capital in helping villagers respond to severe floods and droughts in the years 2000/01 to 2004/05 in two ecological zones of Kompong Thom province.**

Introduction

Cambodia entered the twenty-first century with the hope of an era of peace and prosperity, only to suffer the devastation of floods and droughts for five successive years. The flood of 2000/01, considered the worst in 70 years, affected 3.4 million people. The flood of 2001/02 affected 2.1 million people in regions still recovering from the deluge of the previous year. The drought of 2002/03, reported by the government as the worst in two decades, affected more than 2 million people. The drought of 2003/04 caused lakes in the deepest part of the flood plain to dry out. The drought of 2004/05 affected 2 million people and resulted in widespread food shortages (Chan 2001; Nhim Vanda 2002; Asian Disaster Reduction Center 2003; Helmers and Jegillos 2004; Mao 2005). This article examines the effects of floods and droughts on rice yields and livelihood structures during these years in two ecologically distinct communes of Kompong Thom province and explores the role of social capital in enabling those affected to deal with the exigencies of their situations.

Research Methods

The field research for the study was conducted in June 2005 in two ecological zones of Kompong Svay district, Kompong Thom province. Three villages of San Kor commune made up one ecological zone of the study. These villages are located in the floodplain of the Tonle Sap Lake along the western boundary of National Road 6 near the San Kor commune market. Two villages of Damrei Slab commune constituted the other ecological

zone. These villages are situated on higher ground outside the floodplain of the Tonle Sap Lake, off the eastern boundary of National Road 6, about eight to 12 kilometres from the San Kor commune market. Overall, 155 households were surveyed in the three San Kor villages of Ampil, Chey and Slaeng Khpos, while 100 households were surveyed in the two Damrei Slab villages of Sangkum and Voa Yeav. In addition to the survey, focus group interviews were convened with local authorities, local leaders, village men and village women. Key informant interviews were likewise conducted with selected village households.¹

Concept of Social Capital

The concept of social capital offers much promise in the analysis of how people respond to natural disasters such as floods and droughts. Robert Putnam, whose work helped to popularise the concept, defines social capital as the “features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions” (1993). For Putnam, the primary source of social trust is found in norms of reciprocity and networks of civic engagement, which can be measured by people’s participation in associations. The density of such associations, gauged mainly through quantitative surveys, indicates the extent to which a society possesses a solid supply of social capital.

Recent critiques of Putnam’s approach, employing more qualitative research methods, focus on people’s access to stocks of social capital and the context in which social networks are embedded (Grix 2001). Factors such as education, employment and social class are crucial in understanding one’s access to social capital, given that participation in associations and networks depends largely on one’s resources and social status. Similarly, specific social contexts shape the forms of social capital that emerge and the direction that access is likely to take.

Access to various stocks of social capital in society determines to a large extent one’s social inclusion or exclusion. In this regard, social networks may be classified into three basic types: bonds, bridges and links (Woolcock 1998; Narayan 1999). Bonding social capital comprises the strong horizontal ties which connect family members, friends and neighbours. Bonding with family, friends and neighbours helps to reduce vulnerability and provides a social safety net. Bridging social capital embodies the weak horizontal ties which connect people from different groups and networks with those of similar economic backgrounds. Bridging with people inside and outside the community opens up opportunities for improving livelihoods and mobility. Linking social capital represents the vertical ties that connect people with those in positions of power and influence such as banks, government agencies and elected officials. Linking

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Table 1. Household Experience of Severe or Normal Floods in Years 2000/01 to 2004/05, Ampil, Chey and Slaeng Khpos villages, San Kor commune, June 2005

Year	Experienced severe flood		Experienced normal flood	
	Number	Percent	Number	Percent
2004/05	3	2	102	66
2003/04	9	6	105	68
2002/03	58	37	70	45
2001/02	134	86	18	12
2000/01	147	95	5	3
N=155				

with powerful individuals and institutions allows people to leverage resources for long-term benefits. People who have strong networks within and across all three types are normally better able to cope with disasters such as floods and droughts.

Experience of Floods²

The households surveyed in the San Kor villages of Ampil, Chey and Slaeng Khpos had experienced severe floods in the five year period 2000/01 to 2004/05 (Table 1). A large majority of those surveyed suffered severe flooding in 2000/01 and 2001/02, and more than one-third experienced severe flooding in 2002/03. More than one-fourth of the households interviewed were forced to evacuate their homes as a consequence of flooding. Nearly nine out of 10 households had members who had become ill, most commonly from diarrhoea and intestinal ailments. The successive years of severe floods caused huge and widespread losses in agricultural earnings and prevented villagers from making a swift recovery. Assistance from external agencies was helpful but limited, compelling households to rely mainly on their own resources for rehabilitation. Reciprocal assistance from neighbours and friends, prominent at the onset of the floods, was circumscribed by the poor villagers' poverty. Of note, the households interviewed in the two Damrei Slab villages, situated outside the Tonle Sap floodplain, experienced no flooding during these years.

Experience of Droughts

The households surveyed in the two communes had experienced severe droughts from 2000/01 to 2004/05

(Table 2). Except for the crop year 2002/03, the three San Kor villages suffered a higher annual incidence of severe drought in the five years under study than the two Damrei Slab villages. This is notable given that the San Kor villages likewise endured severe floods during the same period. However, the incidence of related health problems, again most commonly diarrhoea and intestinal ailments, and of income

losses due to damaged rice seedlings or crops during severe droughts, was slightly higher in the Damrei Slab villages. This perhaps accounts for the higher percentage of households in Damrei Slab receiving assistance during severe droughts. Generally, needs were much less visible during severe droughts than during severe floods.

Rice Yields 2000/01 to 2004/05

The three San Kor and two Damrei Slab villages surveyed were heavily reliant on rain-fed wet season paddy rice production. As a consequence of the severe floods and droughts, villages in both communes recorded extremely low rice yields in the disaster-prevalent years under study (Tables 3 and 4). Due to village topography, rice harvests in the San Kor villages were at their lowest during the highest incidence of severe floods, while yields in the Damrei Slab villages were at their lowest during the highest incidence of severe droughts. Even in the best years and despite their location in two different ecological zones, rice productivity in both communes averaged less than one-half tonne per hectare {In 3 of the 5 years, it was above ½ tonne in Damrei Slab, and in one year in San Kor.}. Rice shortages, common even in normal times, increased in the two communes during times of disaster and resulted in reduced rice consumption for a large majority of households.

Sales and mortgages of paddy rice land in the villages were predominantly a consequence of severe floods and droughts. The loss of rice farms made it difficult for subsistence households to recover fully from the exigencies of severe floods and droughts and still pursue rice cultivation as their main livelihood activity.

Table 2. Household Experience of Severe or Normal Droughts in Years 2000/01 to 2004/05, Ampil, Chey, and Slaeng Khpos villages, San Kor commune, and Sangkum and Voa Yeav villages, Damrei Slab commune, June 2005

Year	San Kor villages				Damrei Slab villages			
	Experienced severe drought		Experienced normal drought		Experienced severe drought		Experienced normal drought	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2004/05	67	43	66	43	7	7	69	69
2003/04	92	59	55	35	41	41	53	53
2002/03	67	43	73	47	76	76	21	21
2001/02	42	27	66	43	19	19	72	72
2000/01	34	22	65	42	9	9	67	67
N= 155					N=100			

Table 3. Average Household Rice Yields, 2000/01 to 2004/05, Ampil, Chey, and Slaeng Khpos villages, San Kor commune, June 2005

Year	Average wet season production (kg)	Average dry season production (kg)	Average total production (kg)
2004/05*	696	166	693
2003/04**	410	180	406
2002/03***	328	0	325
2001/02****	207	480	210
2000/01*****	120	480	124

*N = 125 for wet season, 6 for dry season, 127 for total.

**N = 102 for wet season, 2 for dry season, 104 for total.

***N = 88 for wet season, 1 for dry season, 89 for total.

****N = 79 for wet season, 1 for dry season, 80 for total.

*****N = 80 for wet season, 1 for dry season, 81 for total.

Households lacking adequate land for rice production and for use as loan collateral were more likely to experience further marginalisation as a consequence of severe floods and droughts. Clearing forest areas for paddy rice cultivation offered many villagers in both communes an alternative way to expand their landholdings, although the practice diminished the natural resource base so important for water management.

Livelihoods Transformed

The severe floods and droughts that occurred in the study area from 2000/01 to 2004/05 contributed to a broader process of social change emerging in the Tonle Sap region and other parts of rural Cambodia. Rice yields during the five years of successive natural disasters were abysmally low and forced households from the five villages to rely on sources of livelihood other than rain-fed wet season rice production, such as fishing and forest resources and migrant wage work. To offset the losses of their rice crops, San Kor households in the Tonle Sap floodplain exploited fish stocks in the lake, while the Damrei Slab households cut timber and built charcoal kilns. The sudden shift to these income sources contributed to natural resources decline.

Meanwhile, households in both communes relied increasingly on migrant wage labour to support themselves. In the five years under study, members from nearly three-

fifths of the San Kor households and half the Damrei Slab households left their villages to earn, principally as agricultural labourers in Thailand and garment workers in Phnom Penh. Migrant work, which previously supplied short-term supplementary income, became a central livelihood strategy for many households.

Unable to depend on rice production and constrained by limited opportunities in off-farm work, most households had to borrow at usurious rates to ensure their daily survival. Many households likewise had to borrow large sums at high interest to pay health costs. Some households sold or mortgaged rice farms to raise cash or repay debts, thereby undermining their capacity to engage in rice cultivation as their principal livelihood activity. In retrospect, natural disasters, starting with the severe flood of 2000/01, marked a transformation in the lives of many households.

Reliance on Networks of Social Capital

Responses to severe floods and droughts gained from focus group, key informant and survey interviews are usefully examined within the conceptual framework of social capital. With respect to the onset of severe floods, expressions of bonding and bridging social capital were readily apparent. Households in the San Kor villages helped each other to evacuate family members, to watch over animals, to patrol residential areas, to ferry

Table 4. Average Household Rice Yields, 2000/01 to 2004/05, Sangkum and Voa Yeav villages, Damrei Slab commune, June 2005

Year	Average wet season production (kg)	Average dry season production (kg)	Average total production (kg)
2004/5*	553	432	595
2003/4**	353	216	363
2002/3***	365	97	367
2001/2****	582	---	582
2000/1*****	691	---	691

*N = 91 for wet season, 9 for dry season, 91 for total.

**N = 89 for wet season, 4 for dry season, 89 for total.

***N = 82 for wet season, 1 for dry season, 82 for total.

****N = 77 for wet season, --- for dry season, 77 for total.

*****N = 72 for wet season, --- for dry season, 72 for total.

children to school, to distribute water and by providing small rice loans. Once flood waters had receded, San Kor households likewise worked together to repair community infrastructure such as canals, water gates, culverts, schools and roads. These rehabilitation efforts were often aided by external agencies.

With regard to severe droughts, networks of bonding, and to a much lesser extent bridging, social capital were likewise evident, although less conspicuously visible than those which accompanied the heightened activity of the severe floods. During severe droughts, relatives and neighbours from the villages helped each other to replenish rice seeds, by supplying small cash loans, by guaranteeing loans with moneylenders, by looking after the sick, by giving access to family wells and by assisting vulnerable groups. In the aftermath of severe droughts, bridging social capital often took the form of households working together in community food-for-work projects supported by external organisations.

Bridging networks of social capital similarly helped households from both communes respond to the broader demands of social change taking place in their lives. Migrant workers from the villages acquired jobs in Phnom Penh and Thailand through relationships with relatives, friends, neighbours and recruitment agents. Young men and women from the San Kor villages used contacts with fishing lot owners in the Tonle Sap to obtain work as hired labourers. Households from both communes accessed cash from moneylenders in the San Kor commune market to reinvest in disaster-prone rice production, albeit at usurious rates and considerable risk. Households from the Damrei Slab villages similarly relied on moneylenders to finance unofficial payments to government agents to permit the cutting and transport of logs from Preah Vihear province.

For Robert Putnam, high density of membership and participation in associations is a key indicator of a society's supply of social capital. In the San Kor and Damrei Slab villages, household involvement and density of membership in community groups increased considerably from 2000 to 2005. Following Putnam, this would indicate a high level of social capital and civic well-being in the villages. That this was obviously not the case lends credibility to the critique of Putnam's approach. A more promising line of inquiry shifts the focus to research on access to stocks of social capital in specific social contexts. With respect to the San Kor and Damrei Slab villages, it becomes apparent that while households had access to reserves of bonding and bridging social capital, they were virtually excluded from access to linking social capital. In general, the households interviewed lacked vertical ties connecting them with powerful individuals and institutions that could allow them to leverage resources for long-term benefits.

Thus the major challenge that faced the households in the San Kor and Damrei Slab villages was to extend and expand their bonding and bridging networks of social capital to connect with linking networks of social capital, including those with government. Similarly, the challenge for NGOs and other development agencies, beyond simply building capacity in community-based disaster management, was to facilitate villager access to stocks of linking social capital so that they could tap into resources currently denied them and make their voices heard in decisions that affected their lives.

Endnotes

1. Similar methods were applied in greater depth in FitzGerald and So 2007.
2. The data and tables presented in the following sections are taken from the Cooperation Committee for Cambodia study: *Understanding Social Capital in Response to Floods and Droughts: A Study of Five Villages in Two Ecological Zones of Kompong Thom Province*, Analysing Development Issues Team and Research Participants, August 2007.

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