



Mechanism toward Resilience Building in the Face of Climate Change: A Review for Cambodian Rural Communities

NIMUL CHUN*

Faculty of Agriculture, Svay Rieng University, Svay Rieng Province, Cambodia

Email: chun_nimul@hotmail.com

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Abstract The article discusses the current climatic situations in Cambodia and existing mechanisms of the country to address climate change (CC) and the level of rural communities being able to adapt to CC. Reviews of various CC related documents indicate that structures and mechanisms at national level to address CC are adequate but limited at community level. The existence of the structures is beneficial to local people unless the adaptive capacity is enhanced with sufficient technological alternatives, implications and applications with wider sector involvement and a decentralization system. An emerging barrier to resilient building of community and the country is limited of fiscal decentralization as the current financial sources for CC resilient building are solely dependent on external funds for decades while these sources are declining. Additionally, informational, technical and managerial inputs are still strongly required for local communities in order to ensure that the least consequences of any occurred climatic hazards can be obtained. Involving private sector would, therefore, be a good option for local communities in the future provided that private investors have skills to effectively manage rural infrastructures, for example irrigation systems.

Keywords rural development, climate change mechanism, environment

INTRODUCTION

In the year 2012, Cambodia was ranked as the 26th most vulnerable country to CC in the world (Kreft and Eckstein, 2013). In 2011, Cambodia was ranked as the 10th most affected country in the world with more than 250 people being killed as a result of flooding (Kreft and Eckstein, 2012) and 270,000 hectares of cultivated land being destroyed, affecting more than 50,000 households (Wise, 2012). Despite being a fairly-small country (181,035 km²), the temperature in the year 2030 is estimated to vary greatly per its geographical location with the average increase of about 2⁰C (MoE et al., 2011). The variation in these conditions makes the country's level of vulnerability differ as well. Despite being in a high level of vulnerability, the country has paid attention to the problems of CC only in the last decade. Since early 2010, CC concepts have been integrated into several new emerging national programmes and onto the development agendas of more state institutions and civil societies development organizations, including National Strategic Development Plan (NSDP), Rectangular Strategy Phase II (Pheakdey, 2013), and Sub-National Reform Strategy. These concepts are eventually in the Cambodia Climate Change Strategic Plan 2014-2023 (RGC, 2013). These have been added to the CC resilience building agenda for the country at both national and sub-national levels. Despite CC concepts being arguably captured and integrated into various policy documents at national level with some tangible accomplishments to be proud of; exposure, sensitivity and adaptive capacity of local communities to CC have posted continuous questions and doubts.

OBJECTIVE

The purpose of this paper is to explore the extent to which local communities are ready to face up to the upcoming repercussions of the ever-changing climate. The objectives of the article are to provide an overall understanding on climate change issues and impacts on rural livelihood, to explore and assess the existing mechanisms to cope and build rural community capacity and resilience in the face of CC in rural communities in Cambodia.

METHODOLOGY

Literature reviews in combination with actual experience working in the field of climate change is a method being used for preparing this study. Various documents including research articles, government policy documents and project implementation reports of related institutions on climate resilience and mechanism had been consulted. The information relevant to climate change policy, studies, and decentralization and deconcentration (D&D) policies and mechanisms of three main stakeholders; Cambodian governments, development partners and civil society organisations; was gathered and synthesized so that insights of climatic issues and responses can be revealed and appropriate measures can be suggested. Prior to the analysis, the socio-economic context, particularly poverty and responses of rural people was studied to determine the relationships of climate change impacts on rural livelihood and effectiveness of the existing measures can be identified. From these associations, the possible approaches would be able to propose.

RESULTS

Cambodia Rural Livelihood

Agriculture and natural resources: In Cambodia, there is still a majority of poor inhabitants residing in rural area with agriculture as their main occupation, employing more than half of the country's labour force. Rice production, covering more than 80% of total cultivated land areas, is the most dominant crop. Nearly 80% rural families are rice farmers. Rice production contributed 10% of country's total export commodities in 2007 (Yu and Diao, 2011). Fishing is also an important part of rural people's daily life. Nearly 80% of Cambodian animal protein consumption is from fish (Hortle, 2007). Animal husbandry is one of the key drivers in rural livelihood, contributing to 7.6% of GDP. Cattle and buffaloes are the biggest share of the sector with nearly 80% of the total animals in the country (FAO, 2004) and number of animals in 2009 was 29 million being known as not only the source of draught forces but also savings (Bansok et al., 2011). Forestry is a subsistence source of livelihood for nearly 80% of the population in rural areas. However, the pressure being put on these forest areas by economic land concessions is gradually putting the livelihood of the rural people under threat (Bansok et al., 2011).

Poverty and migration: Poverty and inequality are still rampant in Cambodia. Poverty rate was reported to be around 25.8% in 2010 of which 91.1% of them were residing in rural areas (MoP, 2010) and the figure was 20.5% in the year 2011 (The World Bank, 2013). Despite the small proportion of the poor, the group that is sensitive to poverty is proportionally large, i.e. a small change in consumption should bring 41% of the rural people back into the group under the poverty line (The World Bank, 2013). The vulnerability of the rural people is very high as low income is unable to cope with natural shocks and migration to other parts of Cambodia and abroad is a kind of an autonomously adaptive mechanism to disaster events (Bylander, 2013). Floods caused migration as in the floods of year 2011, which caused around 9% of rural poor migrated to obtain jobs (RGC, 2012). This would be

greater in the near future because of the upsurge of rural labour forces and less available land for agricultural production due to economic land concessions (Scheidel, 2013).

Impacts of Climate Change

Direct impacts of natural phenomena such as storms, floods and droughts are significant. Typhoon Ketsana in 2009 resulted in large damages and losses. For rural road alone, the costs were estimated to be about USD 28 million (RGC, 2010). The adverse effect of the 2011 flood on rural infrastructure was one of the worst impacts in Cambodia's recent history resulting in immense damages on rural infrastructures (Wise, 2012). In addition to floods, droughts have been found to have the most frequent effect on rural people despite being paid less attention from related state authorities (UNDP, 2010). CC has a strong association with rural livelihood. Any changes can make profound impacts on food security and way of life in the rural areas. For example, changes in rainfalls and temperatures have a significant impact on productivity of rainfed rice (Mainuddin et al., 2012), resulting in decreasing rice yield (Johnston et al., 2010). The effect is even worse as agricultural production in rural areas generally depends mainly on rainfall and only 18% of the cultivated land areas have irrigation systems (Yu and Diao, 2011). Animal husbandry is reported to be sensitive to changes in temperature (Jhonston et al., 2010). Infections and diseases are more likely to occur (Seo and Mendelsohn, 2007), especially during the hottest period of the year (Bansok, 2011). All of these have made people think that agriculture is not a good choice (Bylander, 2013). These factors have made rural people greatly vulnerable to the impacts of CC as their adaptive capacity is weak (Gallopín, 2006).

Climate Change Adaptation Mechanism

National adaptation mechanism: Adaptive mechanism to CC in Cambodia is complicated with overlapping roles of institutions. The most well-known institution dealing with disaster and risk reduction is National Committee for Disaster Management (NCDM), albeit having limited authorities and budgets for implementation. A number of state institutions have declared that they have the mandates to tackle the issues. In late 2006, the National Climate Change Committee was established with a coordinating body under Ministry of Environment and a number of state institutions as members including the Ministry of Agriculture, Forestry and Fishery, Ministry of Water Resources, and Meteorology, Ministry of Health and Ministry of Planning as implementing agencies. Another agency is Ministry of Interior that involves mainly with deconcentration and decentralization reform (CCCN, 2014). The Ministry of Interior is leading a nationwide reforming programme of the country and is also involved in the process of integrating CC concepts into local authority plans and budgets. The state budget has channelled funding to local level authorities through this programme (Kimchoeun, 2011). Despite having a coordinating institution, the actual process in coordinating is difficult and time consuming.

Sub-national level mechanism: There is no specific study spelling out the mechanism at sub-national level in response to CC, except the common state administrative system; national, provincial, district, community, and village level. Each administrative area can have a chance to be supported on the topic of CC unless the area has been included in any CC programmes or projects. Apart from this common administrative structure, the system being used to respond to climatic hazards of the National Committee for Disaster Management and the CC capacity building of Ministry of Environment is almost the same to the existing administrative system of the government.

Non-governmental organizations: Non-Governmental Organizations and Civil Society Organizations are playing a major role in developing rural areas and communities. International development organizations coordinate for financial support, implement climate change related projects and advocate the establishment of policy documents. These organizations include UNDP, the World Bank, Asia Development Bank, DANIDA, IFRC-RCS, SIDA, Plan Cambodia, and Oxfam (AIT, 2010). The