

THE VULNERABILITY OF AGRICULTURAL PRODUCTION TO FLOODS

case study in the Steung Sangkae River Basin

Context and objectives

Exceptional floods in 2011 have recently highlighted the paradox of water management; water is a corner stone of agriculture and, at the same time, can considerably hamper development. Floods have had considerable impacts on the overall agricultural production in all agro-ecological regions of the country and especially in the areas bordering the Tonle Sap Lake and the Mekong lowland areas. Future effect of climate change through the water cycle will increase the likelihood of extreme climate events, such as the flood that has hit most of Cambodia in 2011. The effects of climate change are likely to be exacerbated by other drivers such as deforestation. In this context, Cambodia tries to develop institutions to manage flood events as part of an integrated water resources management system at river basin level.

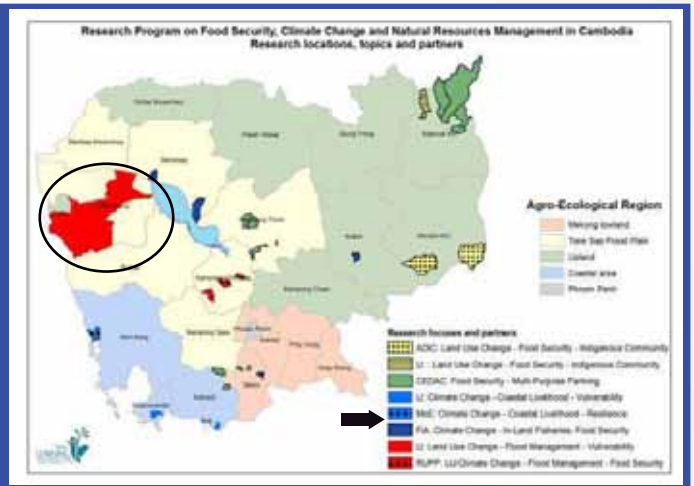
In order to provide recommendations for integrated water resource management at the river basin level, the research aims to improve the knowledge base available on floods

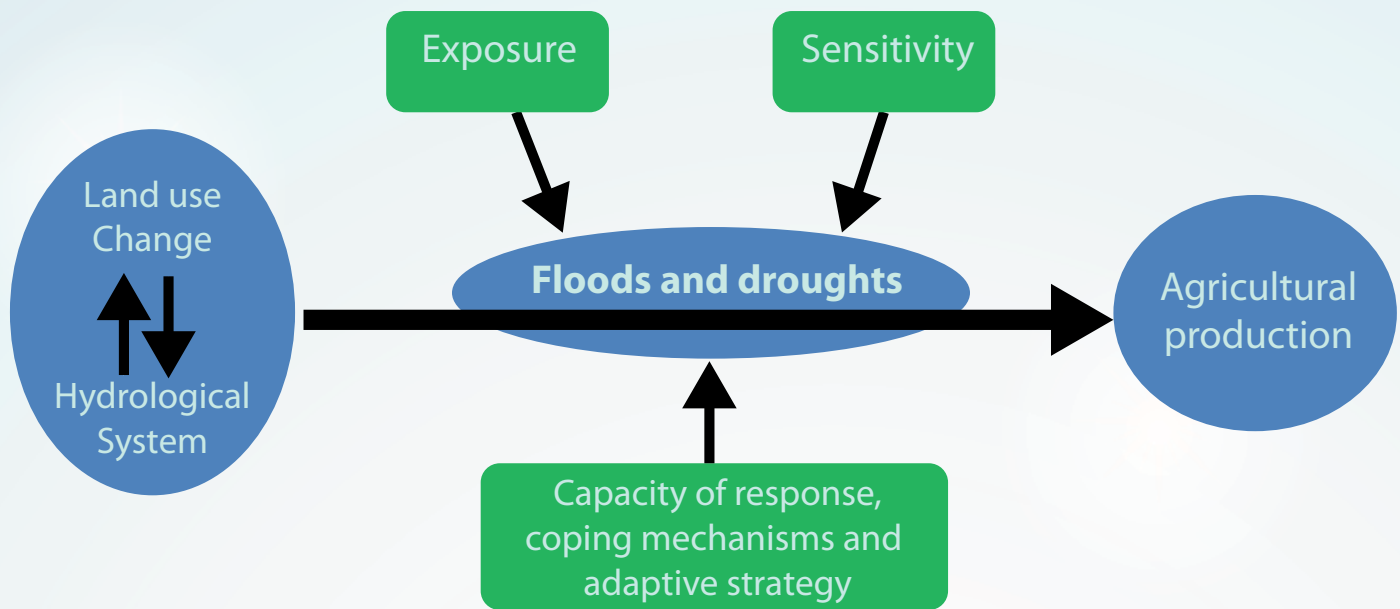
as they relate to the agriculture production sector in a predominately agriculture-oriented Steung Sangkae river basin in Battambang province. This choice is motivated by factors such as the strong past and current development of the agricultural sector of the province in a context of deforestation and demographic increase. This current development put the water resources under an increasing pressure for both domestic and agricultural demand.

The overall objective of this research is to understand the vulnerability of agricultural production to floods.

Methodology

Vulnerability is defined as the inability of a system to cope with adverse effects of changes (IPCC, 2007). Vulnerability entails three dimensions, which are the exposure, the sensitivity and the adaptive capacity of a system to the changes. In this case, we focus on the capacity of the agricultural sector to deal with floods and drought events.





The vulnerability analyses will be conducted at two different levels; commune and household using different research methods. At commune level, focus group discussions and reviews of existing databases will allow for the construction of specific indexes, which will be analyzed statistically and spatially in a geographic information system. The exposure and adaptive capacity at commune level will be measured through participatory mapping and surveys conducted during commune workshops (31 communes within the river catchment area). Information on household level vulnerability will be collected through structured quantitative surveys in 3 villages located in the upstream, middle-stream and downstream zones of the river catchment area, which are representative of different agro-ecological contexts.

Contribution to the program

The original contribution of the research to the program is to address vulnerability issues at several scales (watershed,

commune and household). Moreover, this project is conducted in partnership with the Provincial Department of Land Management, Urban Planning, Construction and Cadaster and the Provincial Department of Agriculture, of Battambang province. It is expected that this partnership will generate results that are important for provincial agencies involved in spatial and environmental planning.

Contact

Ms. Heng Chinda, Senior Research Officer
chinda@learninginstitute.org
 Ms. Doch Sotheavin, Research Assistant
sotheavin@learninginstitute.org