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The Economy and Environment Program for Southeast Asia (EEPSEA) was established in May 1993 to support training and research in environmental and resource economics across its 9 member countries: Cambodia, China, Indonesia, Laos, Malaysia, Papua New Guinea, the Philippines, Thailand, and Viet Nam. Its goal is to strengthen local capacity for the economic analysis of environmental problems so that researchers can provide sound advice to policymakers.

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The Winners And Losers Of The Floods In The Mekong Delta – A Study From Vietnam

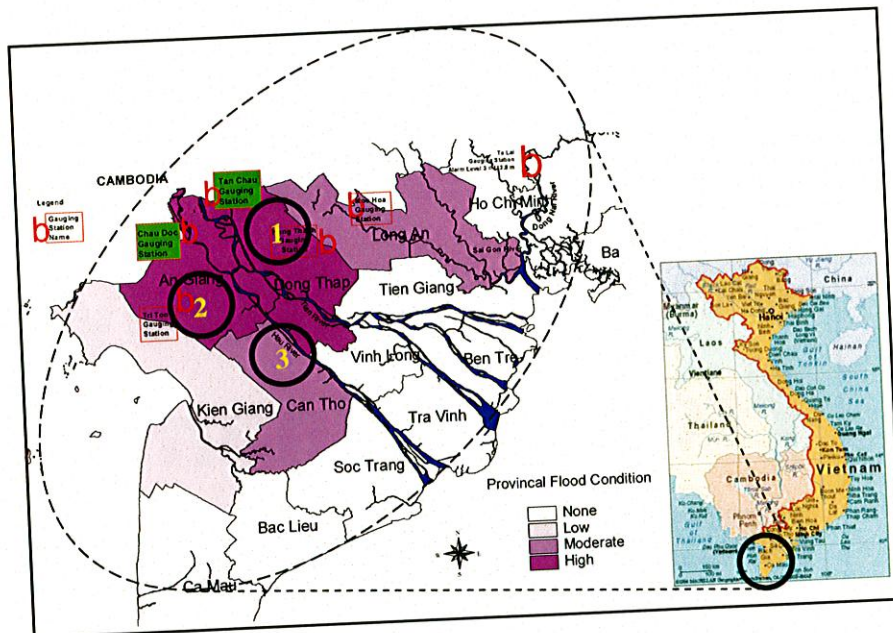
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Floods are a familiar and frequent feature of life in the Vietnamese Mekong River Delta (MRD).

Although these annual floods bring hardship to a great many people, they also bring a wide range of benefits, especially to farmers. Now a new EEPSEA study has looked at how the floods affect different social groups. It has also assessed how the resilience of households to the floods is affected by the way they make →

**A summary of EEPSEA Research Report No. xx-xx: 'Social Capital, Livelihood Diversification and Household Resilience to Annual Flood Events in the Vietnamese Mekong River Delta' by Nguyen Van Kien, Australian Demographic and Social Research Institute, the Australian National University, Acton 0200, Canberra, ACT, Australia.
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Location of the Mekong River Delta and the study sites

→ their livelihoods and the social connections and interactions they have.

The study is the work of Nguyen Van Kien from the Australian National University. It provides a comprehensive picture of how the people of the MRD cope with the floods. In particular, it shows that informal social capital (ie. relationships with neighbours) plays an important part in enhancing household resilience to floods. It therefore recommends that both the Vietnamese government and local community groups should encourage collective activities at the neighbourhood level to facilitate community solidarity and boost households' resilience to the floods.

Living with Floods in the Mekong River Delta

The MRD is located on the south-western edge of Vietnam. The delta comprises four million hectares of land and accounts for 12.25% of Vietnam's total land area. With a total population of 17.4 million, the delta is the second-most populated

region within the country. Approximately 80% of the region's population live in rural areas and the livelihood of most of the population is based on agriculture, aquaculture and forestry. About half of the MRD's area is annually flooded and the majority of its rural population is vulnerable to the impact of floods. These cause the loss of human life, the loss of crops and damage to property. However, the floods also help maintain agricultural productivity in the region. They bring fish, wash away farm residuals, purify water, kill pests and help make the soil of the delta fertile.

Although it has been acknowledged that the MRD's annual floods bring both benefits and challenges to its rural population, no study had demonstrated how the floods affect different social groups. There is also little understanding of the factors that improve the resilience of households to floods and help them secure their homes, food and livelihoods when flood occur. Nguyen Van Kien's study attempts to

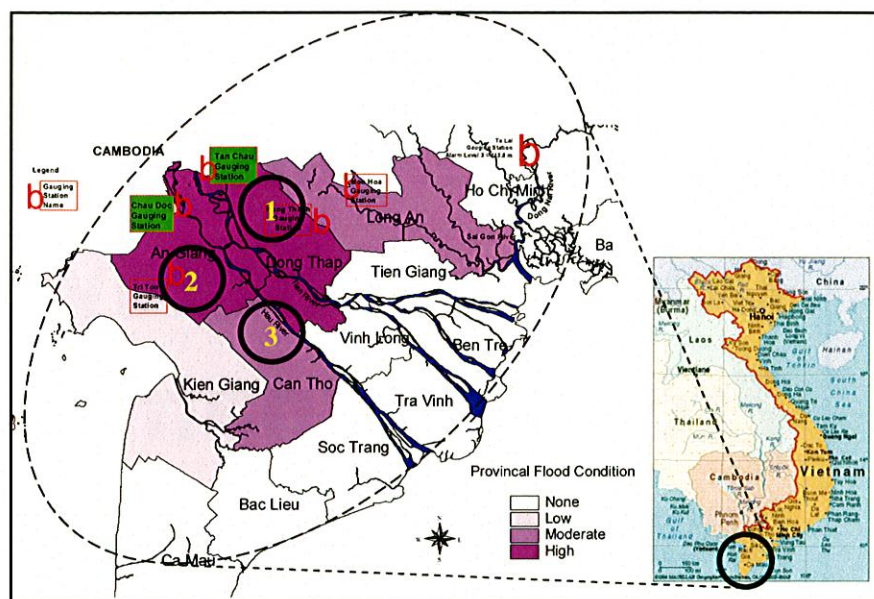
identify the winners and the losers of the MRD's annual floods. The study also explores the relationship between a household's resilience to floods and its level of social capital. Social capital includes the neighbourhood attachments and social support networks that a household enjoys and its level of participation in local groups and associations. The study also looks at the relationship between a household's resilience to floods and the way its members earn their livelihoods.

Looking at how Households Cope

Three communes were selected for this study. They were chosen to represent different flood regions of the MRD. The first research site, Phú Đức commune in Tam Nông district, Đồng Tháp province, is located in the most flood-prone region. The second study site, Thạnh Mỹ Tây commune in Châu Phú district, An Giang province, is located in a moderately flood-prone area. The third study site, Trung An commune in Cờ Đỏ district, Cần Thơ City, is situated in the region with the lowest risk of flooding.

The study employed both qualitative and quantitative research approaches to investigate the relationship between social capital and household resilience. Resilience is defined as the ability of households to learn from, cope with, and benefit from flood events. Thematic analysis was used to compare the opinions, experience and perceptions of different social groups. Factor analysis was used to look for patterns in household responses, and to construct an index of household resilience and neighbourhood attachment.

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Collecting Information on Flood Resilience

Qualitative data was collected using in-depth interviews with key informants, focus group discussions and field observations. Information from the qualitative research was used to design a household survey, which was conducted in August 2010. Members of the faculty of Agricultural and Natural Resources of An Giang University were trained to conduct the survey. The interviews were conducted during the flood months in order to encourage respondents to talk about their experience of living with floods. They were conducted at the farmers' homes, at a suitable time, in order to maximize the willingness of respondents to participate.

The survey involved a face-to-face interview with the representative of each household (husband or wife). It collected demographic and economic information about each household member. Respondents were asked to give details of their, social supportive networks and their participation in community groups and associations. They were also asked to assess their level of neighbourhood attachment. This was done by getting them to rate their agreement with a series of questions such as: "I regularly participate in cultural and religious activities in the neighbourhood," and "advice is available from my neighbours when I face difficulties."

The survey also assessed the capacity of households to learn from, cope with and adapt to floods. Again, this was done by getting them to rate their agreement with a series of questions such as: "I am confident that my household can find a safe place to evacuate to if there is an extreme flood event in the future," "I want to learn new farming practices

to cope with floods, such as fishing, prawn farming," and "I am confident that my household will not need to borrow rice or money from informal sources during the flood season."

The Impact of the Floods

The study confirms that the floods have both positive and negative impacts on households. Not surprisingly, the study finds that floods of different sizes have different impacts; it also shows that floods have different types of impacts on different social groups.

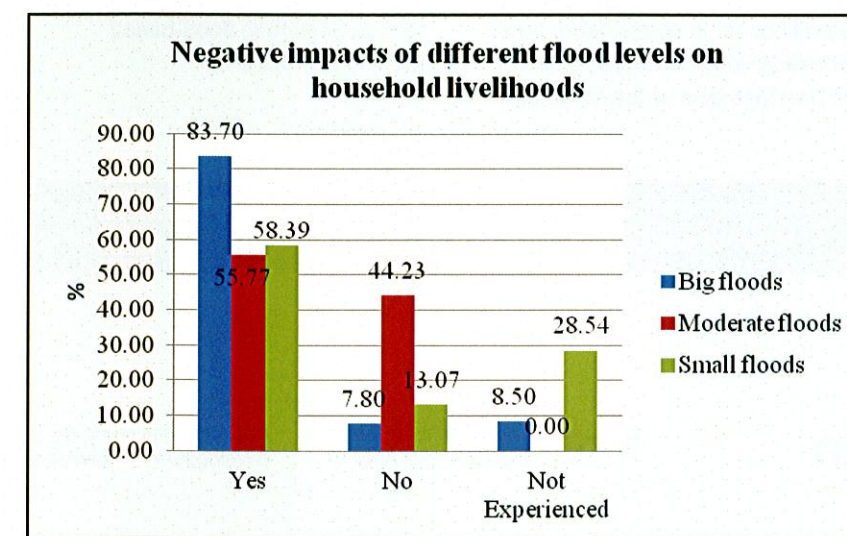
Poor households are more likely to be affected by big floods which reduce their fishing income and damage their homes. On the other hand, medium-income and better-off households are more likely to benefit from big floods. This is because their rice crops benefit from the fertile sediment deposited by the floods. Big floods also kill insects and rats and this is good for rice farmers too. Interestingly, small floods also affect the livelihoods of better-off and poor households in different ways. Poor households lose their fishing income due to small floods, while the

better-off and medium-income households have to pay more for pesticides, herbicides and fertilizers for their winter-spring rice crops. Overall, moderate levels of flooding are considered to be most beneficial by most social groups, as they bring fewer costs and more benefits to rural livelihoods.

The Impact of Livelihood Diversification and Social Capital

The findings do not show that livelihood diversification has a significant effect on households' resilience to floods. However, the results do confirm that specialization in rice farming has a significant positive effect on a household's capacity to secure food and income during the flood season.

It is also clear that different forms of social capital have different effects on household resilience. For example, a higher level of household neighbourhood attachment has a positive effect on its ability to secure food and income, but not its ability to secure its home. What's more, the more neighbourhood attachments a



Negative impacts of different flood levels on household livelihoods

household has the better it will cope with floods and the more interest it will have in learning new flood-based livelihoods. In comparison, a household's participation in supportive social networks increases its ability to learn new livelihoods during the flood season. However, it does not have a significant effect on a household's capacity to secure its home, food or income.

In the MRD, it is clear that neighbours are a key resource and help households cope with and adapt to annual flood events. For example, neighbours help each other to evacuate and lend each other money and food during extreme flood events. Neighbours also share information with each other about how to exploit the benefits of the flood season - they share farming techniques and tips on collecting fish and snails and growing vegetables.

The Effect of Wealth and Location

The study shows that one of the key problems that households face is the disruption of income streams during the flood season. The study also finds that household income has a significant effect on three key resilience factors – the capacity to secure homes, the capacity to secure food and the level of interest in learning and engaging in new livelihoods. Rich households are less likely to be interested in learning new livelihoods. In comparison, poor and medium-income households often own less land or are landless,

so they have to work harder to secure income and food in order to survive during the flood season. People in the highest flood-prone region are less likely to be resilient in terms of securing their houses, food and income, but are more likely to learn new ways of living with floods. Surprisingly, the livelihood diversity index has no effect on household resilience to floods for these households.

Other socio-economic variables, such as gender and the age of respondents, also affect the level of interest shown in learning new livelihoods. For example, male respondents are more likely to learn a new flood-based livelihood than are women. Young respondents are more likely to learn new way of living with floods than are old. The type of housing that people live in also has a significant effect on a household's resilience (not surprisingly, concrete houses are the least vulnerable). Interestingly, the places where people live affects their interest in learning new flood-based farming techniques. For example, people who have moved to residential clusters are more resilient in terms of housing security, but less likely to learn new flood-based livelihoods. The reason for this is that they live far from their land and find it hard to take care their farms. Consequently, they are more likely to shift to non-farm work in Ho Chi Minh city, than to engage in flood-based farming practices.

How to Improve Household Resilience

The study shows that informal social capital (ie. "relationships with neighbours") offers an important way to enhance households' resilience to floods. It therefore recommends that the Vietnamese government and community groups should encourage collective activities at the neighbourhood level to facilitate community solidarity.

At present, many rural households do not benefit as much as they could from participation in local groups or associations and miss out on opportunities to enhance their resilience to floods. Groups and associations should therefore be strengthened to enhance trust between rural people and to enhance the benefits they get from participation.

Overall, the findings of the study provide insights how households can be helped to cope with and adapt to future flood events in the MRD. This is vital. There is evidence that a rise in sea level due to climate change will increase the risk of flooding in the MRD, which will affect the livelihoods of millions of people. Consequently, despite the benefits that floods bring, the livelihoods of people in the MRD will be vulnerable if measures are not undertaken to help them cope with and adapt to future flooding.

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