

## **Migration, Remittances, Livelihood Trajectories and Social Resilience in Coastal Vietnam**

W. Neil Adger, P. Mick Kelly, Catherine Locke,  
Alex Winkels and Luong Quang Huy<sup>1</sup>

### **Introduction**

Migration has changed every corner of Vietnam in the past fifty years. At the same time, social upheaval, the impacts of war and political and economic transformation have changed the nature of social relations and environmental resources. Although demographic change is most striking in the uplands<sup>2</sup>, the fertile coastal lowlands of Vietnam have also experienced significant changes. These demographic changes, allied to changing consumption and production patterns, bring about often-related environmental and resource use outcomes. It is these outcomes, such as changing forest cover, intensification of agriculture and over-exploitation of renewable resources, that are commonly the focus of environmental research. But this research frequently occurs without explicit linking to the demographic changes that contribute to and shape the process of change. Thus, this study explicitly examines the links between migration and resource use, specifically the impact of emigration on resource use in a migrant sending area. The research goes back to basics and hypothesises that the impacts are not uni-directionally negative. As a focal point, we seek to investigate the implications of migration on social resilience, which we define in terms of the ability of individuals and communities to absorb external changes and stresses, such as those associated with demographic change, while maintaining the sustainability of their livelihoods.

### **Social resilience, demographic change and migration impacts**

Social resilience is the ability of a community or of individuals to withstand shocks and stress without significant upheaval. Shocks and stresses are defined as significant changes in social structure and livelihood brought about by, for example, government policy, civil strife or environmental hazards.<sup>3</sup>

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<sup>1</sup> School of Environmental Sciences and School of Development Studies, University of East Anglia, Norwich, NR 4 7TJ, UK, Email: n.adger@uea.ac.uk.

<sup>2</sup> Hardy, A. (2000) Strategies of migration to upland areas in contemporary Vietnam. *Asia Pacific Viewpoint* 41, 23-34.

<sup>3</sup> Adger, W. N. (2000) Social and ecological resilience: are they related? *Progress in Human Geography* 24, 347-364.

In this paper, we develop the concept of social resilience as applied to communities dependent on natural resources.<sup>4</sup> The social resilience of such a community depends both on the resilience of the resource base on which that community depends and on the social, economic and institutional ‘infrastructure’ of the community itself and the broader socio-political context within which that community is located. Within this framework, demographic changes such as migration affect social resilience by, *inter alia*, altering economic well-being and the structure of the community and by impacts on the resilience of the resource base.

Although the notion of community has long been problematic, resilience at this level can be thought of as made up of the structure of individual household's livelihoods, the structure of access to resources and the extent of social capital. Significant and rapid changes in social structure in response to shocks and stress can potentially increase individual and household vulnerability. Shocks may also provide potential opportunities for individual and household advancement and the positive transformation of social structure. Chronic stress may force needed renovation in a community. Importantly, social resilience, like social capital, is not necessarily a good thing for every individual in a community.<sup>5</sup> Natural resource allocations and changing use have, by their nature, sets of winners and losers.

Demographic change has diverse social and economic consequences. Within the complex effect of migration on economies and societies, it is clear that remittance income has offsetting impacts on social stability and economic well-being. Evidence suggests that, in some circumstances, particularly in agricultural economies, remittance flows are invested in human or physical capital to enhance household production. At the same time, however, many economies have been depicted as using remittance income in unproductive ways, particularly through changes in consumption patterns.<sup>6</sup> But both investment in physical capital (e.g. increasing intensity of agricultural resource use) and increased consumption also have environmental implications that are rarely appreciated.

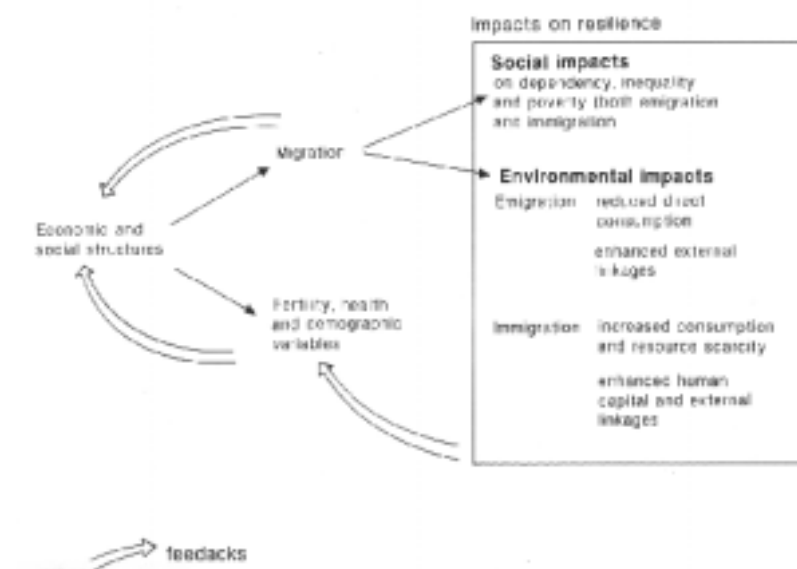
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<sup>4</sup> Locke, C., W. N. Adger, and P. M. Kelly, (2000) Changing places: migration's social and environmental consequences. *Environment* 42(7), 24-35.

<sup>5</sup> Woolcock, M. (1998) Social capital and economic development: toward a theoretical synthesis and policy framework. *Theory and Society* 27, 151-208; Woolcock, M. and Narayan, D. (2000) Social capital: implications for development theory, research and policy. *World Bank Research Observer* 15, 225-249.

<sup>6</sup> These issues are reviewed and revised in Connell J. and D. Conway (2000) Migration and remittances in island microstates: a comparative perspective on the South Pacific and the Caribbean. *International Journal of Urban and Regional Research* 24, 52-70.

**Figure 1 Migration, social resilience and environment linkages**



The hypothesised relations between social resilience and demographic change are represented in Figure 1. In the first instance, social and cultural practice, which often instils a high degree of inertia, and explicit and implicit demographic and population policy determine the rate of demographic change and the parameters of economic and social development.<sup>7</sup> Local demographic responses, including migration, interact with and are part of changing livelihood strategies, including strategies of resource utilisation. The agents of change are primarily decisions associated with fertility as well as health and mortality outcomes on the one hand and migration on the other. The complex relationship between environmental endowment and fertility decisions is clearly central to household decision-making and a major determinant of social resilience at the individual level.<sup>8</sup>

Mobility and migration, within the larger demographic change, are also important in terms of resource use. The relevant implications of migration for social resilience are expanded on in Figure 1; they include both social and resource use implications. First, migration affects the income, wealth, knowledge base and labour supply of both sending and receiving areas. Second, migration affects the use of natural resources, availability of technology and resource extraction. Clearly, these social and environmental consequences are

<sup>7</sup> see Locke, C., Adger, W. N. and Kelly, P. M. (2000) Changing places: migration's social and environmental consequences. *Environment* 42(7), 24-35; McNicoll, G. (1994) Institutional Analysis of Fertility. In Lindahl-Kiessling, K. and Londberg, H. (eds.) *Population, Economic Development and the Environment: The Making of Our Common Future*. Oxford University Press: Oxford pp. 199-230.

<sup>8</sup> e.g. Dasgupta, P. (2000) Population and resources: an exploration of reproductive and environmental externalities. *Population and Development Review* 26, 643-689.

not isolated from one another.<sup>9</sup> One key parameter in the link between them and the subsequent impact on overall resilience, as outlined in Figure 1, is the role of remittance flows, that we now focus on.

Remittances are flows of resources, generally gifts and income, between migrants and their sending areas. Remittance-dependence has traditionally been portrayed as a negative process in the sending areas - increasing dependence on labour exports represents a loss of labour and capital in these areas. Under such scenarios, dependent regions or countries are chronically disadvantaged. Small island states, for example, where migration inevitably means international migration, have been characterised as having perpetual migration and problems of high dependency ratios and high unproductive consumption rates associated with remittance incomes.<sup>10</sup> Revisions to this view present a more dynamic view of remittances arguing that migration decisions are often part of family strategies to raise income, spread risk and provide capital for investment, and loosen constraints in these sending areas.<sup>11</sup> Connell and Conway, for example, contend that migration and remittances are key to the welfare of people in developing economies and enable their populations to adapt to the age of globalisation. Migration and remittances provide flexibility in livelihood options and returning migrants enrich the stocks of human, social and cultural capital of small islands, bringing with them links to trans-national networks. In contrast to the view that remittances fuel conspicuous consumption and undermine local market economies,<sup>12</sup> there is evidence that demonstrates that remittances encourage positive investments and savings and support investments in basic needs and education. Remittances foster further mobility in the populations of small islands. Importantly, migration and remittances are critical in dealing with natural hazards, as evidenced in many developing country contexts.<sup>13</sup>

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<sup>9</sup> In addition individual decisions have implications for migrants and other family members are likely to be strongly patterned by age, gender and social identity. See de Haan, A. (1999) Livelihoods and poverty: the role of migration: a critical review of the migration literature. *Journal of Development Studies* 36(2), 1-47; Locke et al. 2000. op cit.

<sup>10</sup> Lipton, M. (1980) Migration from rural areas of poor countries: the impact on rural productivity and income distribution. *World Development* 8, 10-20; Bertram, G. and Watters, R. F. (1985) The MIRAB economy in South Pacific micro-states. *Pacific Viewpoint* 26, 497-519.

<sup>11</sup> e.g. Taylor, J. E. (1999) The new economics of labour migration and the role of remittances in the migration process. *International Migration* 37, 63-88; Connell, J. and Conway, D. (2000) Migration and remittances in island micro-states: a comparative perspective on the South Pacific and the Caribbean. *International Journal of Urban and Regional Research* 24, 52-78.

<sup>12</sup> Lipton, M. (1980) Migration from rural areas of poor countries: the impact on rural productivity and income distribution. *World Development* 8, 10-20.

<sup>13</sup> Paulson, D. D. and Rogers, S. (1997) Maintaining subsistence security in Western Samoa. *Geoforum* 28, 173-187; Adger, W. N. (1999) Social vulnerability to climate change and extremes in coastal Vietnam. *World Development* 27, 249-269.

But as highlighted in Figure 1, remittances have an ambiguous impact on the environmental resource base in both migrant sending and receiving areas. In developing countries, migrants move primarily to urban areas. Indeed, migration is a driving force behind the demographic transitions that see industrialising countries move from, typically, 60-70 per cent rural populations to 20-30 per cent rural, often within a generation. While providing increased human capital, urban migrants place additional strain on social and environmental services in urban areas, accelerating urban density,<sup>14</sup> and hence bring their own sets of environmental problems. But, at the same time, other migrants in developing countries move to frontier regions where they transform these landscapes through farming and other extractive activities. In Figure 1, the impacts of this form of migration are summarised as increased consumption and resource scarcity, tempered with enhanced capital and social learning through adaptation to new environments.<sup>15</sup>

In migrant-sending areas, the various environmental and related social impacts of remittance income can also offset one another. Investment in agricultural intensification and conservation of productive resources such as land or in human capital clearly represents a net benefit as far as environmental resources are concerned, But investment in unsustainable resource use or technology represents a loss. There is no *a priori* reason for assuming unproductive or destructive use of remittance income and there is sparse empirical evidence either way. Investigations of the use of remittance flows largely focus on either the negative social impacts of remittances in dependent societies (the traditional 'dependence' view) or the positive impacts on broader development objectives (e.g. the 'new economic of labour migration' view). But there are a number of important indirect impacts of remittance incomes that provide pointers to their likely environmental impact in any given situation. Examples include the relative mix of consumption versus investment alongside the priorities placed on physical and human capital and the impact of remittances on inequality.

First, households receiving remittance income either increase consumption or invest in capital, depending on the relative scarcity of each category and the expected returns. But these decisions must be seen as part of wider resilience and livelihood strategies. Perspectives that perceive enhanced consumption, particularly in agrarian developing countries, as a negative

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<sup>14</sup> Drakakis-Smith, D. (1996) Third World cities: sustainable urban development (II) population, labour and poverty. *Urban Studies* 33, 673-701.

<sup>15</sup> see Muchagata, M. and Brown, K. (2000) Colonist farmers' perceptions of fertility and the frontier environment in eastern Amazonia. *Agriculture and Human Values* 17, 371-384.

outcome, fail to place this single effect in the broader context of, for example, kinship and reciprocity as part of informal insurance and networking processes.<sup>16</sup> Enhanced social capital is often important in managing collective environmental resources such as fisheries, forests or grazing rights in agrarian societies and has to be accounted for. These broader implications are often not adequately understood, it is claimed, because of methodological impediments within migration research.<sup>17</sup> Remittance flows are not earmarked for specific purposes; they are ‘fungible’ and may displace other expenditures as well as having indirect impacts on other households and enterprises. Thus, their direct and indirect impacts, along with reciprocity and social capital implications, are difficult to quantify.

The second issue relating the social and environmental elements of remittance flows is that of the impact on the distribution of income and asset accumulation and thence indirect feedbacks on resource use. Again, the impact of migration and remittances in this sphere is largely an empirical question. But the most important findings from diverse studies<sup>18</sup> show patterns consistent with the motivations for migration. Migrants’ behaviour in terms of remittances depends on the home circumstances. There is some evidence that migrants from relatively wealthy families, other things being equal, remit to a greater level than migrants from less wealthy families, perhaps motivated by their own inheritance.<sup>19</sup> But other motivations for higher remittances include alleviating risk and variability in livelihoods in the households remaining in the sending areas. If the former observation is more prevalent, then remittances are likely to exacerbate income and asset inequality. In a series of studies in Mexico, Stark, Taylor and others<sup>20</sup> have shown that, when migration is costly in its initial stages, migration is limited to richer households, again maintaining income discrepancies. Only when it becomes less costly and more certain of a good economic return do poorer families engage in migration. In these circumstances, migration can reduce inequality in the sending area. The impacts of migration on inequality also vary over time as shown through longitudinal study.<sup>21</sup>

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<sup>16</sup> e.g. Platteau, J. P. (1991) Traditional systems of social security and hunger insurance: past achievements and modern challenges. In Ahmad, E., Drèze, J., Hills, J. and Sen, A. (eds.) *Social Security in Developing Countries*. Clarendon: Oxford pp. 112-170.

<sup>17</sup> Taylor, J. E. (1999) The new economics of labour migration and the role of remittances in the migration process. *International Migration* 37, 63-88.

<sup>18</sup> Summarised in Taylor, J. E. (1999) The new economics of labour migration and the role of remittances in the migration process. *International Migration* 37, 63-88.

<sup>19</sup> Hodinott, J. (1994) A model of migration and remittances applied to western Kenya. *Oxford Economic Papers* 46, 459-476.

<sup>20</sup> Stark, O., Taylor, J. E. and Yitzhaki, S. (1986) Remittances and inequality. *Economic Journal* 96, 722-740.

<sup>21</sup> Taylor, J. E. (1992) Remittances and inequality reconsidered: direct, indirect and intertemporal effects. *Journal of Policy Modeling* 14, 187-208.

But what then is the indirect impact of inequality on resource use and ultimately on social resilience? The model developed in Figure 1, and discussed by Locke and colleagues,<sup>22</sup> proposes that inequality is detrimental to social resilience in two ways. First, uneven distribution of income and technology leads to differential access and entitlements to scarce environmental resources and hence can result in both the undermining of collective action institutions and in negative spillovers into the over-exploitation of open-access resource. The circumstances where this occurs have been discussed in a number of studies.<sup>23</sup> Second, uneven distribution and rising inequality, in the absence of evolving institutional arrangements, exacerbates vulnerability of the marginalised to external shocks and deprives them of resources for coping with the impact of natural hazards, other risks and potential downturns.<sup>24</sup>

Thus, migration and remittance income can play a major role in determining the social resilience of areas undergoing demographic changes. In line with perspectives which perceive migration as part of wider political economy where migrants and their places of origin are 'bound together by beneficial informal contracts, including agreements to provide reciprocal insurance'<sup>25</sup>, we argue that remittance income can affect the overall sustainability of resource use. Thus, we can investigate the impact of remittance income on resilience through two mechanisms. The first mechanism is the direct impact of remittance income on changes in social structure and in modifying asset distribution and inequality. If remittance income increases inequality and leads to the squeezing of collective coastal resources, does this reduce resilience? The second mechanism concerns the indirect impacts of remittance income on the sustainability, and hence resilience, of the resource base. Are, for example, remittance incomes invested in coastal resource use which may be unsustainable, thereby undermining the resilience of resource-based coastal communities?

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<sup>22</sup> Locke, C., Adger, W. N. and Kelly, P. M. (2000) Changing places: migration's social and environmental consequences. *Environment* 42(7), 24-35.

<sup>23</sup> Baland, J. M. and Platteau, J. P. (1999) The ambiguous impact of inequality on local resource management. *World Development* 27, 773-788; Adger, W. N., Kelly, P. M., Ninh, N. H. and Thanh, N. C. (2001) Coastal resources and management under the transition. In Adger, W. N., Kelly, P. M. and Ninh, N. H. (eds.) *Living with Environmental Change: Social Resilience, Adaptation and Vulnerability in Vietnam*. Routledge: London pp. 79-92; Adger, W. N. (2001 in press) Governing natural resources. In Berkhout, F., Leach, M. and Scoones, I. (eds.) *Negotiating Environmental Change: Advances in Environmental Social Science*. Edward Elgar: Cheltenham.

<sup>24</sup> e.g. Mustafa, D. (1998) Structural causes of vulnerability to flood hazard in Pakistan. *Economic Geograph* 74, 289-305. Adger, W. N. (1999) Social vulnerability to climate change and extremes in coastal Vietnam. *World Development* 27, 249-269.

## **Expanding mobility and migration in contemporary Vietnam**

Theoretical and conceptual issues are investigated in this paper in the context of lowland coastal Vietnam where migration and remittances are becoming increasingly important in contemporary society. Vietnam has experienced rapid increases in population mobility from the 1980s to the present, particularly since the process of reform and economic renovation known as *doi moi* was initiated and controls on population movement relaxed. Despite higher fertility rates in rural than in urban areas and official policies discouraging rural-urban movements up till the mid-1980s, a much more marked population growth rate was recorded in urban than in rural areas in the 1980s,<sup>26</sup> indicating significant unofficial rural-urban migration well before the formal introduction of reforms. This trend has accelerated since the late 1980s, with increasing demand for labour in urban areas. Meanwhile, the allocation of agricultural land to households as part of the reform process has provided considerable incentives for rural labour, leading, it has been argued, to significantly improved agricultural productivity and increased aspirations and expectations.<sup>27</sup> Rural migration from more highly populated areas to ‘frontier’ regions, often in the uplands, has also been characteristic of the period, with the balance shifting from planned to spontaneous migration. The result has been considerable spatial and temporal variation, not to mention increasing complexity, in Vietnam’s migratory experiences during the present reform era.<sup>28</sup>

In general, the *doi moi* period has been marked by increased spontaneous migration from rural to both rural and urban destinations. According to recent studies, institutional changes surrounding decollectivisation, land tenure and household registration regulations have been particularly significant in shaping the shifting patterns of population mobility.<sup>29</sup> There is no doubt that decollectivisation and the introduction of the household contract system in the countryside from the early to mid 1980s, associated with improved agricultural

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<sup>25</sup> Taylor, J. E. (1999) The new economics of labour migration and the role of remittances in the migration process. *International Migration* 37, 63-88, p. 75.

<sup>26</sup> see Anh Dang, Goldstein, S. and McNally, J. (1997) Internal migration and development in Vietnam. *International Migration Review* 31, 312-337.

<sup>27</sup> Kerkvliet, B. J. T. and Porter, D. J. (eds.) (1995) *Vietnam's Rural Transformation*. Westview: Boulder; Hy Van Luong and Unger, J. (1998) Wealth, power and poverty in the transition to market economies: the process of socio-economic differentiation in rural China and northern Vietnam. *China Journal* 40, 61-93.

<sup>28</sup> Zhang, H. X., Kelly, P. M., Locke, C., Alexandra Winkels, A. and Adger, W. N. (2001) *Structure and Implications of Migration in a Transitional Economy: Beyond the Planned and Spontaneous Dichotomy in Vietnam*. Global Environmental Change Working Paper 01-01, Centre for Social and Economic Research on the Global Environment, University of East Anglia, Norwich.

<sup>29</sup> see Hardy, A. (2000) Strategies of migration to upland areas in contemporary Vietnam. *Asia Pacific Viewpoint* 41, 23-34; Dang Nguyen Anh (1999) Market reforms and internal labour migration in Vietnam. *Asian and Pacific Migration Journal* 8, 381-409. Scott, S. (2000) Changing rules of the game: local responses to decollectivisation in Thai Nguyen, Vietnam. *Asia Pacific Viewpoint* 41, 69-84.



production, have played a critical role.<sup>30</sup> Since the 1980s, differentials in rural-urban economic opportunities increased in some areas and the welfare ‘safety net’ in rural areas was diminished. The 1993 Land Law and rights to transfer, exchange, mortgage, lease and inherit land paved the way for a land market and hence increased mobility and flexibility. The erosion of the household registration regime in the cities, through weakened state control over rural-urban population movements, made it possible for rural residents to stay, survive and find employment in the city. The shift from restrictions on to encouragement of a non-state sector, including production, trade and commerce as well as services, has created numerous new employment opportunities in the informal sector.

The increasingly integrating role of the non-state market has helped to link rural-urban and delta-frontier areas more closely, making people more aware of the new opportunities across space and administrative boundaries. The operation of these factors has interwoven with political changes, including a gradual shift in the function of the state (e.g. planning by administrative fiat in the command economy towards co-ordination and regulation of the market) on the one hand, and the state’s continued interventions in population mobility on the other. All these have worked together in a complex fashion to change the landscape of population movement in contemporary Vietnam and provide the policy context in which migration and remittance income affect rural resource use and its sustainability. Both lowland to upland and seasonal and cyclical lowland migration have significant resource and environmental impacts. These are best documented for the uplands in terms of change in forest cover, but are less well documented for lowland areas.

### **Collecting data on migration and livelihoods**

This study concentrates on the impacts of net emigration and remittances on a coastal lowland migrant-sending area in terms of livelihood trajectories, inequality and the pre-conditions for coastal resource use. These issues are investigated through data collected for one district in coastal northern Vietnam, showing the dynamic nature of the processes outlined above within livelihood trajectories of individual households. Data on remittance income as part of livelihood strategies for a sample of households in this area were collected in 1995 and in 2000. The research strategy covers long-term investigation of both migrant

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<sup>30</sup> following Zhang, H. X., Kelly, P. M., Locke, C., Alexandra Winkels, A. and Adger, W. N. (2001) *Structure and Implications of Migration in a Transitional Economy: Beyond the Planned and Spontaneous Dichotomy in Vietnam*. Global Environmental Change Working Paper 01-01, Centre for Social and Economic Research on the Global Environment, University of East Anglia, Norwich.

sending and receiving areas and the impacts of remittances, social capital and the evolution of ecological knowledge in these areas. This paper reports on one aspect: the previously unrecognised area of the sustainability of resource use associated with migrant sending areas.

Data from surveys undertaken in Giao Thuy District in Nam Dinh Province in 1995 and 2000 are used to examine changes in inequality and income levels over time. Giao Thuy District lies in the Red River Delta Provinces of lowland northern Vietnam where the reported mean annual income is around \$120 per capita, making this a very low income region from a global perspective. Central planning of agriculture and other resource allocations has been the dominant form of organisation over the most recent two decades, but with increasing migration and trade linkages to the regional economy in the past decade.<sup>31</sup> Quantitative measures of inequality in income start from the base of *GDP per capita* and include equality indices such as Gini coefficients that show the extent to which the actual distribution of income differs from a hypothetical uniform distribution in which each person or household receives an identical share.<sup>32</sup>

The survey in April-May 1995 involved 308 individuals in 65 households in eleven Communes in Giao Thuy District, while a slightly smaller subset, 229 individuals in 46 households, makes up the panel data across the two time periods. The data collection was based on a stratified area sample with representativeness ensured through randomised selection within the sample frame, usually drawn using Commune census and family planning records. The second survey took place in March 2000 when only 46 common households could be identified from the original survey. This begs the question as to the fate of the households not identified. In the context of this study, it is particularly important if these households were not identified because they had been displaced, or migrated, from the District. From discussions with Commune and District officials, this does not appear to be the case. Rather, individuals had died or had been re-housed within extended family groups. As with all longitudinal surveys, however, the implication cannot be avoided that the survey is biased towards the stable households that are not ‘reconstituted’ and maintain their own existence over time.

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<sup>31</sup> Beresford, M. and Phong, D. (2000) *Economic Transition in Vietnam: Trade and Aid in the Demise of a Centrally Planned Economy*. Edward Elgar: Cheltenham.

<sup>32</sup> Blackwood, D. L. and Lynch, R. G. (1994) The measurement of inequality and poverty: a policy maker’s guide to the literature. *World Development* 22, 567-578.

What then are the other problems of longitudinal data collection?<sup>33</sup> First, besides the possibility of significant observational error with an evolving team over time, the data may well be subject to large-scale fluctuations in environmental, weather and market conditions which impact rice yields and other major income sources. This can be overcome in more abundant panel data by taking running averages of the important parameters, but this is not an option for the present two-time period dataset. The second factor is in the comparability of the economic data over time. The data in this case are adjusted to 1995 values using a consumer price index estimated at the national level.<sup>34</sup> As a measure of economic growth in the local agriculturally-based economy, however, an index of farm-gate price of rice may be a more appropriate deflator. Deflators for the national economy reflect the structure of imports, exports and real exchange rates, factors largely outside the locally-trading economy in rural areas. Real growth rates in income over time may then be lower than indicated using the available consumer price index deflators since the economy of Giao Thuy is based on an agricultural system that has not grown at the rate of the national economy. This discrepancy is reducing over time, given the increasing integration of the Giao Thuy economy at the regional level, a process partly facilitated by migration. Though the data and its subsequent analysis carry these *caveats*, we consider that the estimates of change in income over time, and particularly of income distribution within the time periods, are reasonably robust.

Intra-household equality is assumed in the analysis. The income of individuals is calculated by attributing to each individual the *per capita* income of their household using estimates from the 229 individuals in the panel sample. This assumes that income is distributed evenly within the household irrespective of age or sex. A household survey can be analysed as a set of individuals, by treating children, or all non-working-age dependants, as a weighted proportion of adults for income or varying income generally by age and sex to reflect the true distribution.

Finally, we argue that the diversity of livelihoods and household remittances justifies examination of the household as an extended concept. Livelihoods incorporate income and consumption decisions but also social entitlements and rights, which go, in total, to make up the ‘standard of living’. Entitlement relations are dependent on particular members of the household at various times, but the household in general can be conceptualised as investing in these social

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<sup>33</sup> Hayami, Y. and Kikuchi, M. (2000) *A Rice Village Saga: Three Decades of Green Revolution in the Philippines*. Macmillan: London.

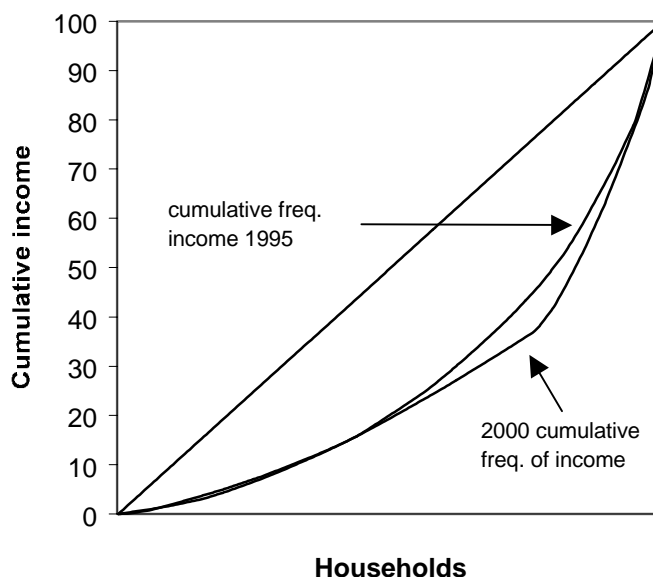
<sup>34</sup> Reported in International Monetary Fund (2000) *Vietnam Country Report: Statistical Appendix and Background Notes*. IMF Staff Country Report 00/116. IMF: Washington DC.

relations to the point where marginal returns are less than for investment in other capital. The second extension of the household model requires the incorporation of migration and remittances within household livelihoods.

### Patterns of migration and impacts

The survey data, along with observations and interviews of key informants in Giao Thuy, point to a picture of rising incomes and well-being, rising inequality, and an intensification of resource use in coastal aquaculture by an exclusive subset of the Giao Thuy population. The evidence suggests that these are all profound changes, partly fuelled by, and indeed driving, migration and the changing level remittance incomes. But does this migrant sending area suffer due to non-productive investment of remittance flows? Each of these issues is now discussed.

**Figure 2 Lorenz curves of individual income for Giao Thuy District, 1995 and 2000.**

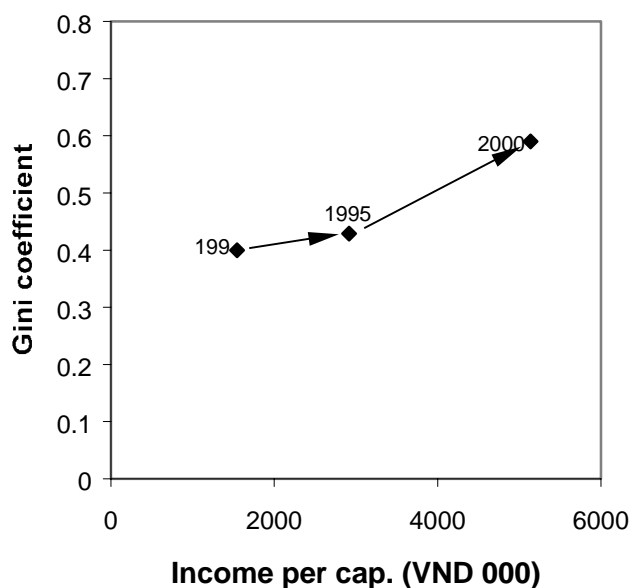


Inequality is changing in its nature between 1995 and 2000. It is increasing as shown in the cumulative frequency Lorenz curves in Figure 2. (The greater the distance of the cumulative frequency curve from the 45 degree line, the greater the inequality in the community.) Thus, the level of inequality is greater in 2000 than in 1995. This rising inequality is in itself dramatic in such a short time period, but is also associated with a doubling of real mean income across the District in the same period, as illustrated in Figure 3. Thus, this lowland coastal region is apparently benefiting from liberalization almost as much

as the urban growth poles of Hanoi-Haiphong and Ho Chi Minh City,<sup>35</sup> thereby dampening the rural-urban differential and ‘lure of the cities’ for immediate economic gain (at least as far as the community as a whole is concerned).

The change in inequality is significant in terms of access to natural resources. Although the income distribution in this District, with an overall Gini (G) of 0.43, was more unequal than the country average income,  $G = 0.36$ , in the mid 1990s,<sup>36</sup> it has risen to a level,  $G = 0.60$ , consistent with advanced capitalist economies, despite having a land and wealth distribution more consistent with its recent history. This high inequality could be explained by measurement error (regarding the lost households between the surveys) or by the influence of off-farm diversification where these sources are accessible only by a proportion of society. To resolve this, the data are decomposed to show the relative importance of income sources, including remittances, on overall livelihoods.

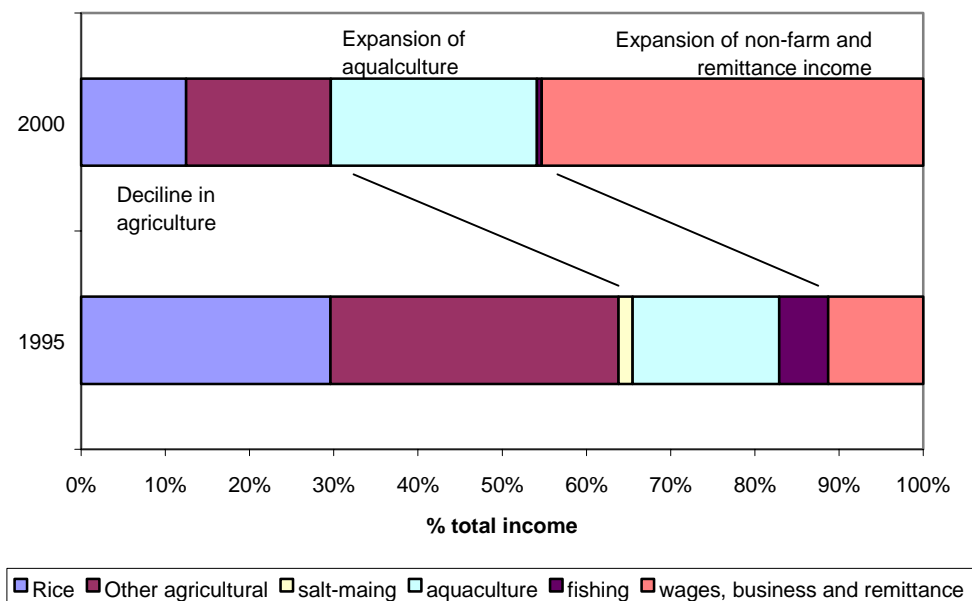
**Figure 3 The evolution of income and inequality in Giao Thuy District 1990-2000**



<sup>35</sup> Ngo Vinh Long (1993) Reform and rural development: impact on class, sectoral and regional inequalities. In Turley, W. S. and Selden, M. (eds.) *Reinventing Vietnamese Socialism: Doi Moi in Comparative Perspective*. Westview: Boulder pp. 165-207; World Bank (2000) *Vietnam Development Report 2000: Attacking Poverty*. World Bank: Hanoi.

<sup>36</sup> Adger, W. N. (1999) Exploring income inequality in rural, coastal Vietnam. *Journal of Development Studies* 35(5), 96-119.

**Figure 4 Reduced reliance on agriculture and increases in wages, remittances and aquaculture, Giao Thuy, 1995-2000**



First, the importance of income sources across time is illustrated in Figure 4. In a period when incomes were doubling, the share of agriculture in overall income declined from 64 percent to 30 percent. Within the agricultural sector, higher value cash crops were introduced such that rice fell from 30 to 13 percent of overall income between 1995 and 2000. Equally dramatically, the redirection of labour into non-farm enterprises and into migration led to an increase of income from these two sources, from 11 to 45 percent of overall income. Among households receiving remittance income, the rate of remittances grew over time, thus providing some evidence that the life-cycle of migrants is important in their remittance behaviour. Further, there is some evidence that migration was limited to richer households as the high transactions (for example, of obtaining permission or licenses to move) acted as a barrier. Under removal of the household registration, this cost is reducing so there is now wider participation in migration activities.

Evidence from the 1995 survey suggests that remittance income (along with wages) was driving up inequality at that time.<sup>37</sup> This is demonstrated in Table 1 (see Annex) where the inequality contributions of each of five categories of income are decomposed. It estimates Gini coefficients for each income source and compares share of total inequality to share of total income. The Gini coefficient is defined as the ratio of the area between the Lorenz curve (shown, for example, in Figure 2) and the diagonal of equality to the total area between the

<sup>37</sup> Adger, W. N. (1999) Exploring income inequality in rural, coastal Vietnam. *Journal of Development Studies* 35(5), 96-119.

diagonal of equality and the horizontal axis. The analysis of the contribution of income sources is carried out by decomposing Gini coefficients as the weighted average of the pseudo-Gini coefficients for each of the components of total income.

Table 1 in the Annex shows the importance of each income source and whether it is contributing more or less to inequality than to its share of income (its ‘inequalising effect’). The major determinant of inequality in 1995 was aquaculture. It became a legal activity in this District in 1989 and flourished through the early 1990s till a major storm in 1992 wiped out the income of a number of small producers and the ponds were consolidated into a smaller number of large owners. Since there are high returns to aquaculture, this source contributes more to inequality than to income share and hence it has this ‘inequalising effect’ (shown as a + in Table 1). Throughout the 1990s, subsistence users of the mangrove resources were being excluded from their use as the mangrove areas became increasingly ‘enclosed’ behind dikes in the pursuit of shrimp farming. Thus, the evolution of shrimp farming represented a reinforcement of trends towards increasing inequality.

Table 1 also shows the contribution wages and remittance income have on inequality. For 1995, wages, enterprises and remittances are taken together and contribute only 11 percent to total income. By 2000 enterprises and wages represent one third of total income with all of the increase in the intervening period being in new ‘off-farm’ enterprises. Remittances now form 9 percent of total income for the sample. By 2000, aquaculture, new enterprises and remittances are all having a ‘inequalising effect’ in Giao Thuy and driving total inequality to higher levels than previously experienced, despite a relatively equitable land distribution. Expansion of aquaculture through mangrove clearance, remittances and other enterprises are inextricably linked in those households undertaking these activities.

**Table 2 Characteristics of rural and urban migration from Giao Thuy**

Migration type	Characteristics
Rural - urban	To Hanoi and regional centres Cyclical Seasonal Involves remittances Specific occupation activities
Rural – rural	To Vietnam highlands Permanent No remittances Frontier activities (forest clearance, coffee etc)

Source: Giao Thuy field surveys.

The patterns of migration from the sample survey and from secondary data in Giao Thuy are summarized in Table 2. This shows two distinct groups of migrants with very different profiles and potential impacts on resource use. The migrants with rural destinations are moving greater distances to the central and southern highland frontier provinces often to undertake forestry, land clearing for coffee production or other resource extraction activities. These migrants tend to be permanent, in the sense of little prospect of return to take up land allocations in their original areas, and also tend not to send remittance income in the establishment years of their new enterprises. Since large-scale opportunities in the frontier areas are only recent, these migrants tend not to have established themselves enough to be contributing to any remaining family in Giao Thuy. In contrast, migrants to urban centers such as Hanoi and Nam Dinh tend to be from higher income households and to have higher education levels, tend to be involved in specific clusters of enterprises in these cities making use of established networks, and return themselves and send back remittance flows to the home area.

**Table 3 Ranked perceived importance of remittance expenditure and contribution to capital assets**

Rank	Use of remittance income	Impact on sustainable livelihood
1	Education	human
2	Food and consumer goods	<i>non-productive</i>
3	Livestock, agriculture and aquaculture	physical& negative natural
4	Construction/infrastructure	physical
5	Health care	human
6	Savings	financial
7	Businesses	financial

Source: Giao Thuy field surveys.

The impact of migrants in the areas which receive them is clearly important in the Vietnam context – the impacts of frontier expansion include forest cover loss associated with agriculture, displacement of ethnic minorities, and the opening up of areas for resource extraction with resulting impacts on timber, wildlife trade and other issues, and have been well documented.<sup>38</sup> These impacts, of lowland to highland migration, as well as the positive role of migrants in building social and human capital in frontier regions are the subject of subsequent work. But this paper concentrates on the impacts in the sending area. In this case, the most important parameter for the impact of migration on social resilience is the

<sup>38</sup> Rambo, A. T., Reed, R. R., Le Trong Cuc and DiGregorio, M. R. (eds.) (1995) *The Challenges of Highland Development in Vietnam*. East West Center: Honolulu.



productiveness or otherwise of the investment of remittance income. As stated in the sections above, the indirect and even the direct impacts of remittance use are difficult to determine by observation.

In the case of Giao Thuy, the use of remittance income is summarised in Table 3, based on the stated preferences of survey respondents. This ranked ordering, derived from the most important investments of past remittance flows, shows education as the highest priority, followed by increased consumption and then by investment in agriculture, livestock in particular, and aquaculture. The impacts on the sustainability of livelihoods are also summarized in Table 3 on the basis of the classification of income sources by human, physical, financial and natural capital. Thus, investment in education represents investment in human capital, where savings and businesses adds to financial capital. What is the net effect on social resilience? Inevitably, the consequences are mixed. Investment in education and healthcare can undoubtedly be classed as positive, they are likely to enhance resilience. Increased consumption, although stimulating the local economy, is often classified as a non-productive use of resources. It should be noted, however, that consumption of food in rituals and other communal activities is an important part of remittance flows in Vietnamese society and can, in effect, represent an investment in social capital.<sup>39</sup> Most important for resource use are the investments in agriculture and aquaculture. These represent investments in physical capital, but, in the case of aquaculture, this is at the expense of natural capital. Investment in the intensification of agriculture, as stated above, has primarily in this District been on diversification from rice to other cash crops.

Effects on resource use and the local environment may accrue from any use of remittance income. Nevertheless, it is arguable that the most direct negative consequences can accrue from investment in aquaculture. Mangroves have been progressively cleared for aquaculture in Giao Thuy through the 1990s, as throughout coastal Vietnam<sup>40</sup>, thereby enhancing flood risk as well as undermining the availability of resources for extraction by poorer sections of the population.<sup>41</sup> Clearing of mangroves exposes the whole population of

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<sup>39</sup> Hy Van Luong (1993) Economic reform and the intensification of rituals in two north Vietnamese villages, 1980-1990. In Ljunggren, B. (eds.) *The Challenge of Reform in Indochina*. Harvard University Press: Cambridge, Mass pp. 259-291.

<sup>40</sup> Nguyen Hoang Tri, Phan Nguyen Hong, Adger, W. N. and Kelly, P. M. (2001) Mangrove conservation and restoration for enhanced resilience. In W. N. Adger, P. M. Kelly and Nguyen Huu Ninh, eds., *Living with Environmental Change: Social Vulnerability, Adaptation and Resilience in Vietnam*: Routledge: London pp. 136-153.

<sup>41</sup> Adger, W. N., P. M., Kelly, N. H. Ninh, and N. C. Thanh, (2001) Coastal resources and management under the transition. In W. N. Adger, P. M. Kelly and Nguyen Huu Ninh, eds., *Living with Environmental Change: Social Vulnerability, Adaptation and Resilience in Vietnam*: Routledge: London pp. 79-92.

Giao Thuy to increasing risk as a result of flooding associated with coastal typhoons. Conversely, conservation and replanting have been shown to be an appropriate response to coastal storms, providing local economic benefits as well as increased protection.<sup>42</sup> Those areas where mangroves have been cleared suffer greater impacts from storms because of the loss of the buffering function the mangroves provide. In addition, the aquaculture enterprises are vulnerable to this hazard. Thus, both the social and ecological resilience of the coastal environments is undermined by mangrove clearance. Conversion also affects the livelihood system dependent on the mangrove resource. The analysis here demonstrates that rising income inequality is observed as a result of the effective privatisation of mangrove areas. Only the richer members of the community can afford to invest in aquaculture and the poorer members of the community are denied access to the mangrove resource. As argued earlier, the net effect the trend in income inequality is that the marginalised become more vulnerable to stress, underlining the resilience of the community as a whole. The increasingly skewed wealth in Giao Thuy concentrates resources in fewer households.

## Conclusions

We have presented a conceptual framework within which social resilience is central to the relationship between demographic change, resource use and environmental health. The value of this framework has been examined using household level data for a resource-dependent coastal region in northern Vietnam. The trends in this region are coming about as a result of wider demographic and political change. While there is some evidence that the institutions of kinship, civil society and social capital appear to have been strengthened in the 1990s in the absence of the social security nets of collectivized communes, the net impacts of policy changes, it can be argued, are towards reduced social cohesion. The land allocation process, for example, has resulted in winners and losers, differentiated particularly in the highlands by ethnic group, gender and access to power. Marginalised social groups have great difficulty adjusting to these new ‘rules of the game’ in contemporary Vietnam<sup>43</sup> and the opening up of new enterprises such as aquaculture often reinforces the processes of

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<sup>42</sup> Nguyen Hoang Tri, Adger, W. N. and Kelly, P. M. (1998) Natural resource management in mitigating climate impacts: mangrove restoration in Vietnam. *Global Environmental Change* 8, 49-61.

<sup>43</sup> Scott, S. (2000) Changing rules of the game: local responses to decollectivisation in Thai Nuyen, Vietnam. *Asia Pacific Viewpoint* 41, 69-84; Scott, S. (2000) Gendered institutions and entitlements to land: an analysis of vulnerability in Vietnamese decollectivisation. In Hainsworth, G. B. (ed.) *Globalisation and the Asian Economic Crisis: Indigenous Responses, Coping Strategies, and Governance Reform in South East Asia*. Centre for Southeast Asian Research, University of British Columbia: Vancouver pp. 457-469.

marginalisation.

We have focussed on the effect of labour market liberalisation and the relaxation of other constraints during the period of economic renovation, *doi moi*, on patterns of migration. In this increasingly deregulated and mobile environment, the participation of households from all levels of income in migration, and the receipt of remittances, is, to some extent, offsetting adverse trends in social resilience. The ability of social institutions to maximise the benefits of increased mobility depends on social capital but also on the role of surprises and the characteristics of the resource system. In the case of remittance expenditure, it appears from survey and other data that resilience is enhanced through risk spreading and through enhanced opportunities for real changes in well-being. In migrant-sending areas, remittance income is focussed on human or physical capital so potentially enhancing resilience. At the same time, however, the natural capital base is being undermined by investment in aquaculture, partly because the returns to aquaculture are much greater than the alternatives of extraction of resources from the mangroves for subsistence purposes. Investment in this sector is also increasing the risk of storm impacts and increasing inequality in the community, further weakening social resilience.

Migration, particularly domestic migration, is an important component of demographic transition often overlooked in the population-environment debates. This study points to the importance of migration impacts on social resilience for both sending and receiving areas and shows that the impacts of migration can be positive or negative. Improving social resilience is an important policy goal, particularly for resource-dependent societies increasingly open to the uncertainties of globalisation and risk, and the complex implications of migration and broader demographic change must be unravelled if effective measures are to be deployed.

## Annex

**Table 1 Decomposition of per capita income inequality by components of income for Giao Thuy, 1995 and 2000**

	1995				2000			
	Gini/ pseudo Gini	Share of income %	Contribution to inequality %	Inequality effect	Gini/ pseudo Gini	Share of income %	Contribution to inequality %	Inequality effect
<i>Xuan Thuy</i>								
Overall income	0.429				0.592			
Farming income	0.420	63.8	62.6	-	0.288	24.5	13.8	-
Aquaculture income	0.592	17.4	24.1	+	0.755	28.7	35.6	+
Fishing income	0.331	5.8	4.5	-	-0.358	0.2	-0.1	-
Salt-making	-0.540	1.7	-2.1	-	n/a	0	n/a	
Wages, business and remittances (1995)	0.415	11.3	11.0	-				
<i>Wages and business (2000)</i>					0.668	33.5	37.8	+
<i>Remittances (2000)</i>					0.771	9.2	11.9	+

Source: Giao Thuy field surveys.