CHAPTER 2 - SOCIAL PROFILE OF HA TINH FOR EBA

2.1. Introduction

Chapter 2 introduced the concepts and methods of Vulnerability Assessment for Ecosystem-based Adaptation (EbA) to climate change. It highlighted the idea on which EbA is predicated: the understanding that ecology, society and economy cannot be separated. Natural ecosystems are the foundation of human existence on this planet, and of all our economic activities. However, these ecological foundations have been profoundly modified and in many places weakened from their original state, by people pursuing their livelihoods (economic activities) in unsustainable ways. Although change is inherent in all global systems, eco-systems have limits to the extent of the changes they can tolerate, without losing their essential structure and functions, on which we all depend. Now climate change is adding to the stresses that people have already induced in natural systems, with potentially grave consequences. EbA identifies ecosystem degradation as a key underlying cause of vulnerability. Urgent action is needed to restore these natural systems to health, to help us sustain our socio-economic systems, indeed our very survival, to the coming challenges. We also need to harness the services of healthy ecosystems to help us adapt to the changes ahead.

To understand the issues and threats posed by climate change and devise practical and sustainable solutions, ecological, social and economic factors need to be considered together, as parts of an integrated whole. Thus, as set out in Chapter 1, for this EbA vulnerability assessment, the unit of analysis is the "socio-ecological system" (SES), defined as:

"complex bio-geo-physical units together with social and institutional actors and their (economic) activities"

The impacts of climate change are felt by people - on their health, their housing, the other people, infrastructure and services they rely on, the natural resources they depend on, the other ways they earn their livelihoods. The severity of impacts and peoples' ability to cope are also felt because of the state of such things. Climate change adaptation too, is entirely a human process, embedded in an ecological context and an economic structure. It is about people understanding climate change and what it means for their lives, and making the appropriate, often innovative changes (to their vision of the future and their activities) needed to secure a sustainable future for their families and communities. It is about governments supporting these processes and tackling the underlying causes of vulnerability. Climate change and our adaptation to it are thus quintessentially social issues: people are at once the major cause of climate change, its victims, and they will be the main agents of adaptation and mitigation.

This social brief for Ha Tinh focuses the analysis on people, asking which groups are most vulnerable and why. In this way, vulnerability can be understood as:

"the state of individuals, groups or communities in terms of their ability to cope with and adapt to any external stress placed on their livelihoods and well-being. It is determined by i) the availability of resources and; crucially, ii) by the entitlement of individuals and groups to call on these resources." (Adger and Kelly 1999)

The underlying causes of vulnerability are important and distinct from the existing dimensions of vulnerability: poor housing, undifferentiated livelihoods based on climate sensitive natural resources, poor health, education, etc. It is important to understand these and processes that drive change. As Adger and Kelly (1999) indicate, the basic causes are access to livelihood resources in the widest sense and this access is geographically/ecologically and politically determined. Table 2.1 below provides examples of local and higher level processes that affect vulnerability. Clearly all approaches to climate change adaptation, be they conventional or ecosystem-based need to consider and address these underlying issues to ensure effective, just and sustainable outcomes.

Table 0.1: Examples of processes that affect vulnerability

Local-level processes	Processes at higher levels
Increasing labour migration	Population growth
Declining labour availability	Increasing/decreasing provision of services by the state
Loss of customary rights and change to "modern tenure systems	Increasing penetration of global markets/ reorientation of most production away from local circulation and reciprocity
Increasing need for cash to operate economically	Changing legislation and tenure systems
Increasing cost of inputs	Declining biodiversity and forests/expansion of agriculture
Privatization of land and resources / Loss of access to communal resources	Declining indigenous knowledge
Monetization of resources and services, with increasing costs of health and education.	Urbanisation
Increasing skill requirements for non-agricultural employment	Deagrarianisation

Source: Adger et al 2004

The present Chapter examines the social dimensions of EbA in Ha Tinh, including the contextual information at the Provincial level that any provincial department should keep in mind in analysing and planning for CCA or EbA. It also examines the key parameters used in this study to develop and describe the SES. Together with Chapters 3 and 4 on ecological and economic factors, this information will contribute to the identification and classification of the main SES for Ha Tinh. Like chapters 3 and 4, this social profile is based on existing data made available to the study by the different departments of the provincial government. Complete and recent population and poverty data were not available so the maps presented are out-of-date.

2.2. Key Social Factors for the Provincial-Scale Analysis in Ha Tinh

2.2.1. Overview

This section presents information to answer key practical questions on social issues for climate change vulnerability assessment and adaptation planning at the provincial level. It does not attempt to provide a full social profile of Ha Tinh. The provincial-level study is intended to use secondary data only, and while many interesting and relevant questions could be posed at provincial level, there is only a limited number of social factors for which sufficiently comprehensive data already exists at this level. Other factors will be examined at the local-level assessment of actual local vulnerability and adaptive capacity, supported by primary data collection where necessary, as shown in Table 2.2. What this profile does attempt is to be "spatial explicit" - that is, to map the selected parameters – to contribute to the mapping of socio-ecological systems, and to help inform the selection of sites for the micro-level analysis.

Table 0.2: Social analysis at the Provincial- and Local-levels of assessment

Provincial-level assessment	Local-level (community) assessment
Based on secondary information available at provincial level	Based on secondary available locally, primary data collection and local stakeholder participation
Focus on broad context and understanding; prioritization	Focus on planning and action
Population, population density, population growth rate, migration,	Population, population growth rate, migration, age-class distribution.
Vulnerable groups: The poor Ethnic minorities Vulnerable livelihoods	Vulnerable groups: Poor, women, elderly, infirm Main livelihood groups, employment Relative well-being within community Underlying causes of poverty and vulnerability: health, education, access to resources, services, governance, decision making;
Adaptive Capacity: provincial government History of responding to extreme events	Adaptive Capacity: commune government, households, individuals. History of responding to extreme events Education, health, skills development; Decision making; innovation

A few simple questions guide the analysis presented below:

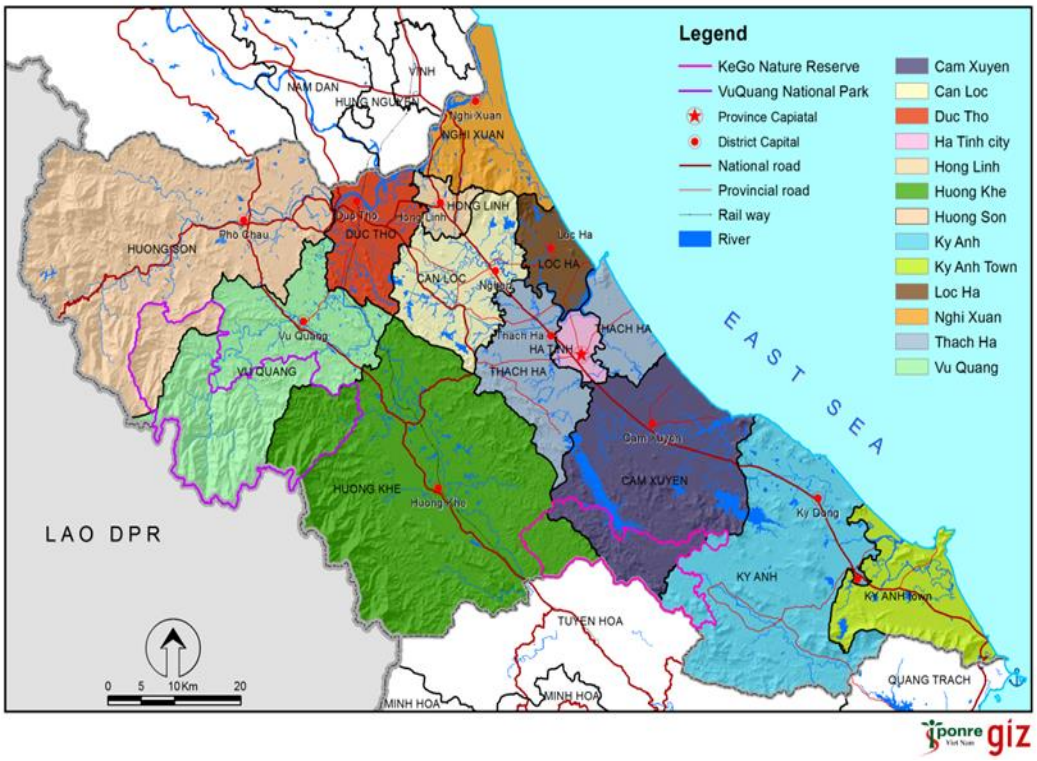
- Now, and in the future, how many people in Quang Binh will be affected by climate change?
    - Where do they live?
    - What are the trends in population? What factors contribute to this?
- Which social groups will be most vulnerable to climate change? Where do they live?
- Which livelihoods are most vulnerable? Where are they found?
- Conclusion: (based on contributions from ecological and social analysis) What should be focus on for the local-level assessment.

These issues are explored in the following sections. To facilitate understanding the data presented, we begin with an overview of Ha Tinh's administrative and governance arrangements.

2.2.2. Administration and Governance

Ha Tinh Province comprises one city, two urban districts (towns), 10 rural districts, and a total of 262 communes. In 2015, Ky Anh town was elevated to an urban district, but does not yet appear in official statistics. Map 2.1 shows these districts and their administrative centres.

Map 0.1: Administrative Units of Ha Tinh province



Responsibilities for disaster response and climate change adaptation are divided between province, district and communes, with communes responsible for the front-line response. Table 2.3 shows the distribution of the 262 communes across the 10 district-level units. There are between 12 and 32 communes under each district, and between around 2500 and 6250 people in each commune. The montane commune authorities are responsible for fewer people, but as shown in the next section, settlements are spread out across a larger area and generally harder to access.

2.2.3. Population

For efficient use of adaptation funds, actions should benefit as many people as possible, against the most important threats and addressing the most common drivers of vulnerability. However, this must be balanced against the bias this often establishes against more remote and dispersed populations.

As populations grow, pressures on natural resources tend to increase, potentially exacerbating the impacts of climate change. It is important to understand where growth is taking place and why.

2.1.3.1. Current Situation

The last census in 2009 recorded a total population for Ha Tinh of 1,223 million people and by 2013 this was estimated to have grown to 1,261 million. Ha Tinh is thus the 25th most populous province in Vietnam, accounting for 1.4% of the total population (2015 estimate[1]. As will be discussed in more detail in the Economic Profile, Ha Tinh is one of the poorest provinces in Vietnam.

Table 0.3: Population-related statistics for the districts of Ha Tinh, 2013

Name of city/district	Area		No. communes	Population			
	hectares	%		Total	%	persons/km²	persons/ commune
Total	**599,782**	**100**	**262**	**1,249,100**	**100**	**208**	4768
Urban Areas							
Ha Tinh city	5663	0.9	16	95,060	7.6	1678	5941
Hong Linh town	5855	1.0	6	37,720	3.0	644	6287
Rural Districts							
Huong Son	110,415	18.4	32	115,910	9.3	105	3622
Duc Tho	20,249	3.4	28	104,750	8.4	517	3741
Vu Quang	63,821	10.6	12	29,760	2.4	47	2480
Nghi Xuan	22,004	3.7	19	97,290	7.8	442	5121
Can Loc	30,248	5.0	23	130,030	10.4	430	5653
Huong Khe	126,350	21.1	22	102,000	8.2	81	4636
Thach Ha	35,443	5.9	31	131,560	10.5	371	4244
Cam Xuyen	63,928	10.7	27	142,300	11.4	223	5270
Ky Anh*	104,143	17.4	33	181,380	14.5	174	5496
Loc Ha	11,663	1.9	13	81,350	6.5	698	6258

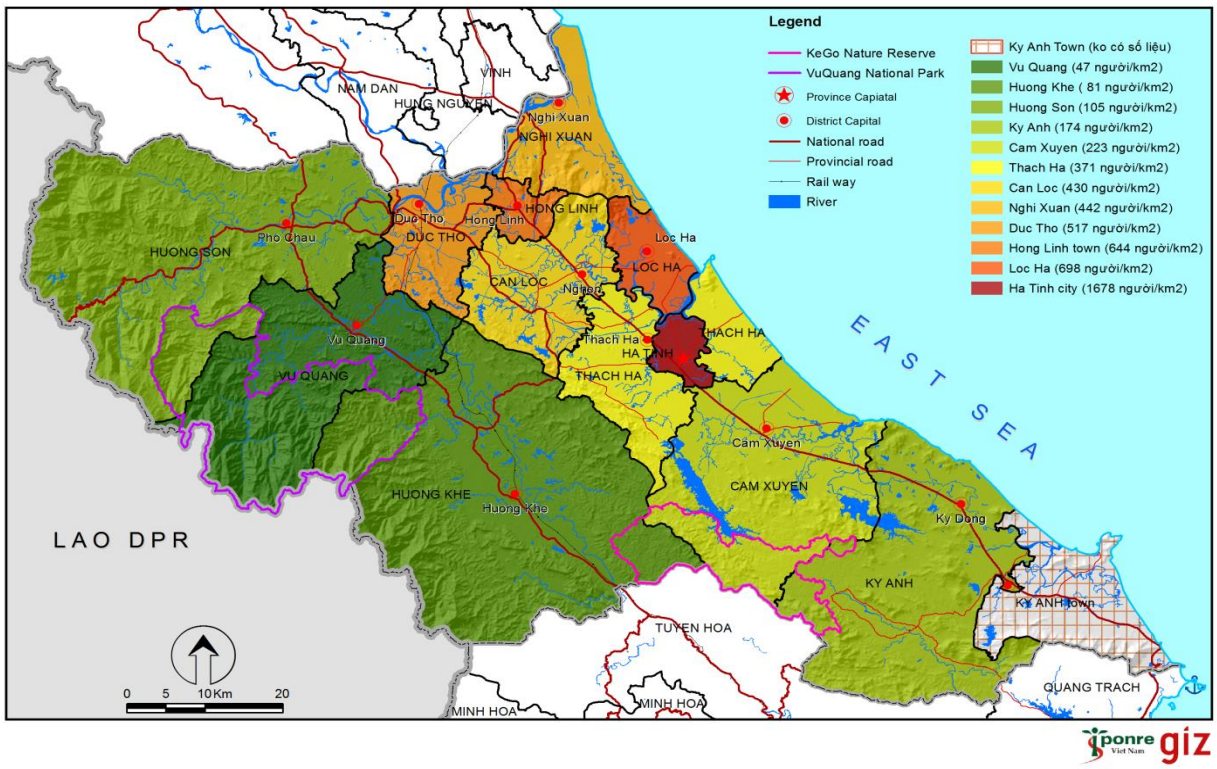
** now elevated to town status, distribution between town and district not available*
Source: Ha Tinh Statistical Yearbook 2014

[1] https://www.citypopulation.de/Vietnam.html

The overall population density is 208 persons/km^2, but Table 2.3, and more graphically Maps 2.2 and 2.3 show that there are very distinct patterns in population distribution, which have implications for climate change adaptation, as they have for many other dimensions of development and governance.

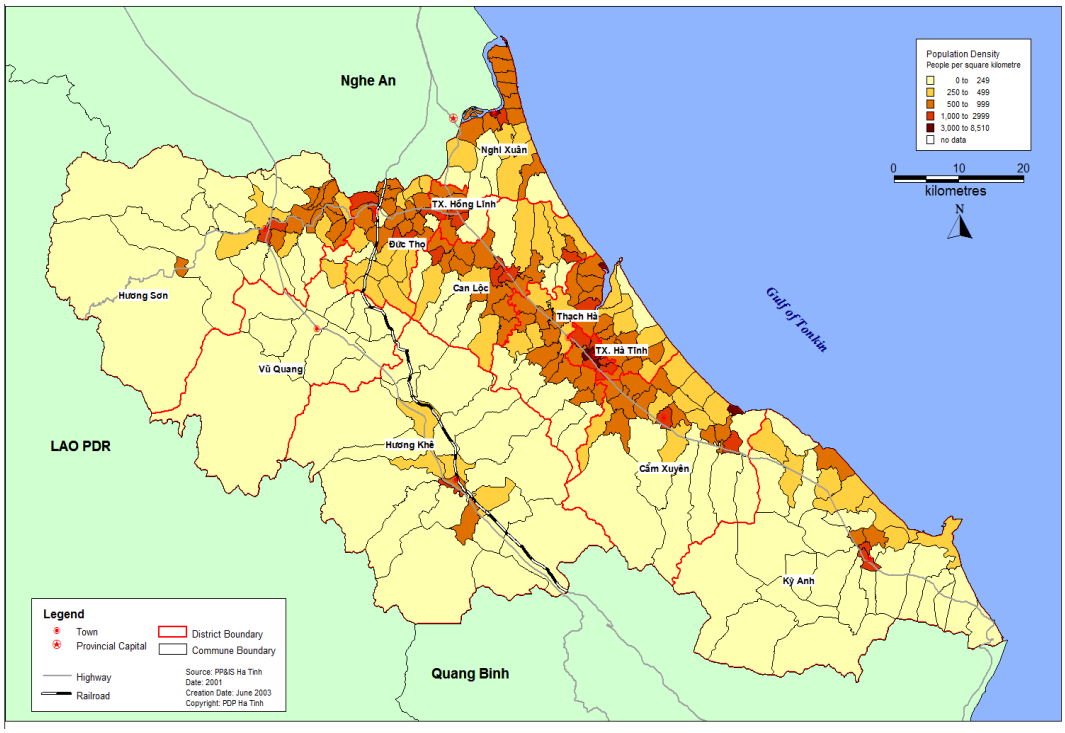
It is well known that the majority of Ha Tinh's population (~ 80%) is concentrated in lowland areas, broadly mirroring the distribution of paddy rice cultivation areas, the location of the provincial capital and the route of the main national road 1A. District population densities here range from nearly 170 persons/km^2 in the provincial capital to 50-80 persons/km^2 in the least dense rural districts. Arguably, this lowland population is most exposed to some of the most extreme climatic events - tropical storms, tidal surges, saline intrusion.

Map 0.2: District Population Density, Ha Tinh, 2015



Maps 2.3 (commune level population density) and Map 2.4 (urban and rural settlement pattern) show that other concentrations of population are found in the broad upland valley of Ngan Sau River, which is also the corridor for the national railway, and the inland valley of the Ngan Pho River in the north of the province, in the road corridor to Laos.

Map 0.3: Population Density of Ha Tinh, by Commune, 2001



The large number of small densely populated communes in the lowlands contrasts with the large sparsely populated districts in the upland areas. In Huong Khe district, the average population density is less than 50 persons/km^2. Of course, this reflects the large area of uninhabited forest in the upland districts. Settlements here may still be quite concentrated in river valleys or other transport routes. While in many other provinces, these montane districts are typically populated by ethnic minorities, in Ha Tinh, over 98% of the population is Kinh (see below). The people inhabiting the narrow inland valleys are subject to flash flooding and cold snaps, and on the mountain slopes to landslides, drought, high temperatures and hot winds from Laos.

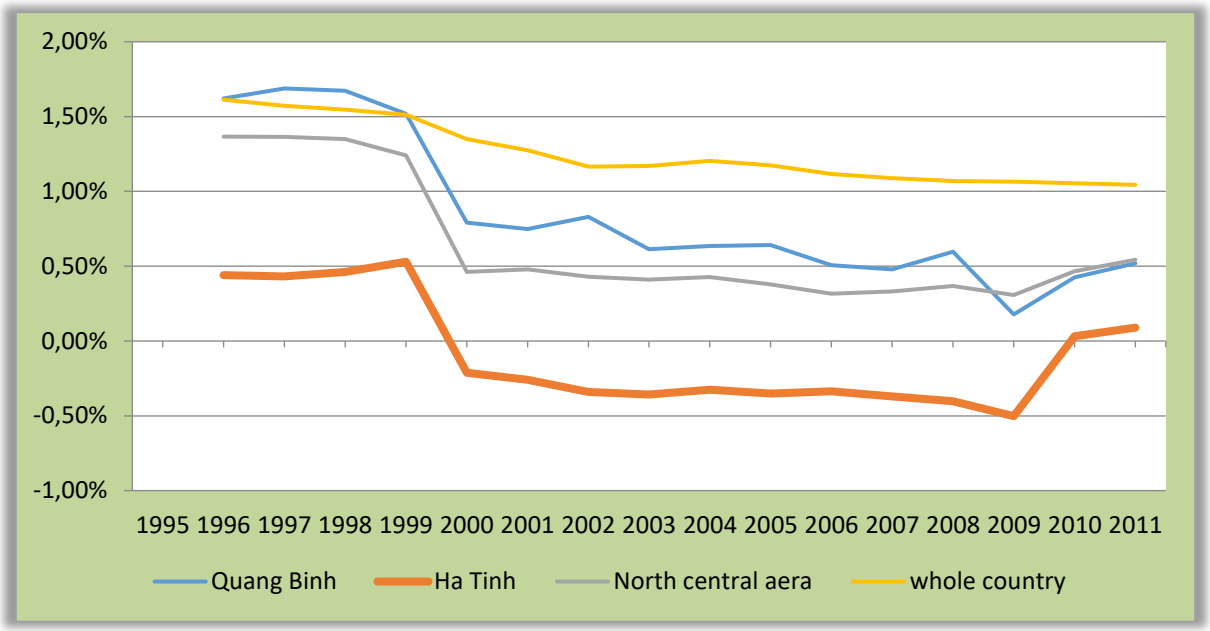
The two urban districts, Ha Tinh and Hong Linh, account for 7.6% and 3% of the total population respectively. Overall, about 16 % of the provincial population is urban, including the district headquarters and 84% rural (Statistics Office, Ha Tinh, 2015).

2.1.3.2. Population trends

The population of Ha Tinh has fluctuated over the last 15 years. Between 2000 and 2010, the population actually dropped from 1.273 million to 1,223 million (-0.36 %), largely due to labour migration to other provinces in Vietnam and abroad (Figure 2.1). Discounting migration during this period, the population was estimated to have grown at a rate of 0.8% pa.

Between 2010 and 2013, the total population grew again to 1,249 million, largely due to the development of the Ky Anh industrial zone and continuing growth of Ha Tinh City, but this only equates to about 0.6% pa[2].

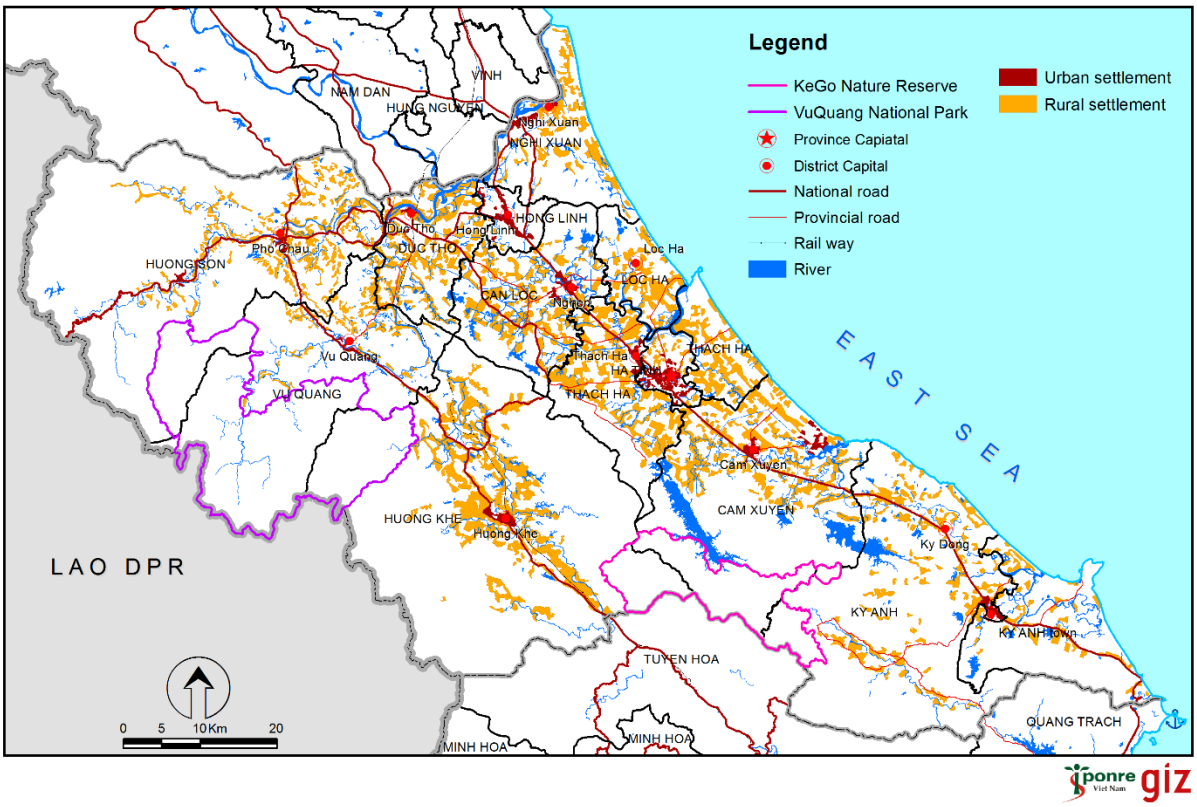
Figure 0.1: Annual Population Growth Rates in Quang Binh, Ha Tinh, North Central Coast Region and Vietnam compared, 1995-2011



Source: GSO

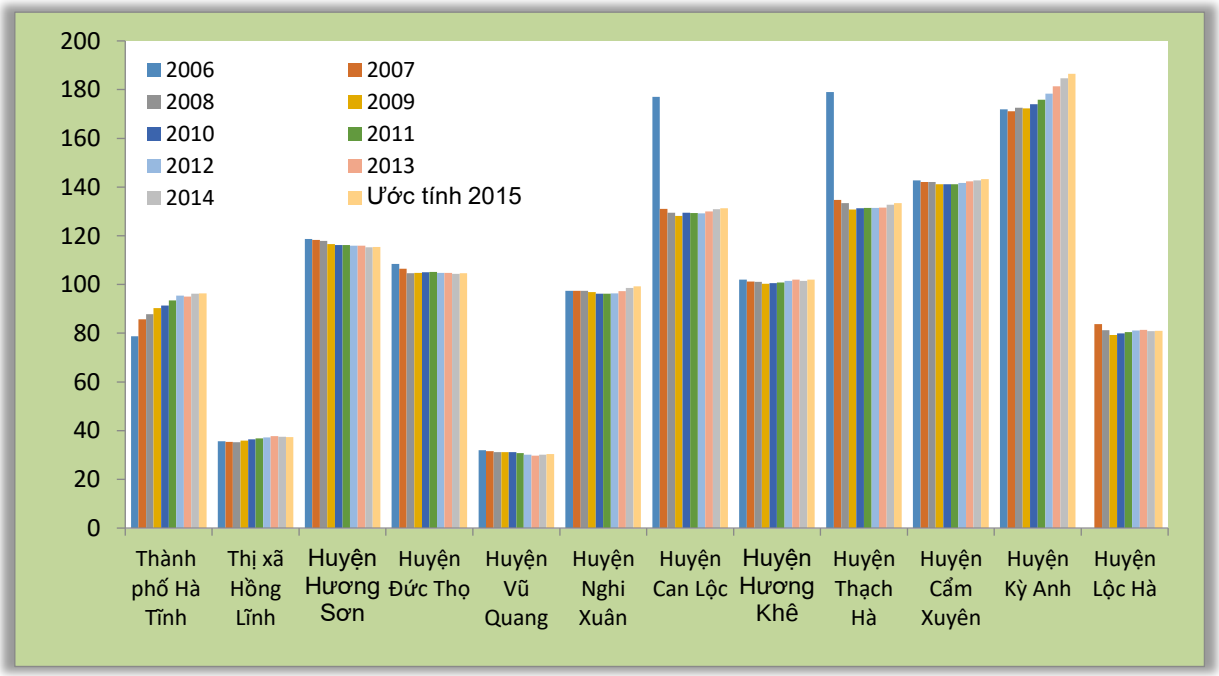
[2] Figures for 2011, 2013 taken from General Statistics Office website. 0.42- 0.48% pa https://www.gso.gov.vn

Map 0.4: Rural and Urban Settlement Pattern, Ha Tinh



Patterns of population growth vary across the province. The urban population grew by 21% between 2006 and 2014, while the rural population fell by 2% during the same period. In the last few years, it has been growing at 1.3% pa while the rural population, particularly in Vu Quang, Huong Son and Duc Tho, continues to decline (Figure 2.2).

Figure 0.2: Population growth rate in Ha Tinh, by District, 2006-2015



Source: Ha Tinh Socio-economic Development Report, 2006-2015

Ha Tinh has one of highest rates of labour migration in the country. Between 2001 and 2010 over 51,000 people migrated from the province for work, representing nearly 10% of the workforce. About 35,000 of these migrants participated in MOLISA's international cooperation programme for job creation through sponsored migration, which ran from 2001-2010. The remaining 16,000 are spontaneous migrants (DOLISA pers comm). In 2010, it was estimated that migrant remittances were equivalent to one-third of provincial export earnings. About half of migrants go to Ho Chi Minh City, Danang or Ha Noi, the other half going overseas to elsewhere in Asia (Malaysia, Taiwan, Korea and Japan) or Arab countries (Libya, Saudi Arabia, Qatar) (Figure 2.1). Over 80% of those migrating abroad came from five lowland districts: Ky Anh, Can Loc, Nghi Xuan, Cam Xuyen and Thach Ha (SEDP 2012). These districts are densely populated, but do not have the highest levels of poverty. There are no data on returning migrants or their subsequent employment and economic performance.

At the same time, the Vung Anh economic zone is attracting labour from other parts of Vietnam, and even foreign workers. Of the 40,000 jobs created, half are taken by workers from Ha Tinh, around 8000 by workers from Taiwan, China and Korea, and the rest from other parts of Vietnam. Many of the jobs are in construction and will end once the site has been developed.

At the same time, the Vung Anh economic zone is attracting labour from other parts of Vietnam, and even foreign workers. Of the 40,000 jobs created, half are taken by workers from Ha Tinh, around 8000 by workers from Taiwan, China and Korea, and the rest from other parts of Vietnam. Many of the jobs are in construction and will end once the site has been developed.

Thus, current population growth is not high enough to exert significant pressure on natural resources, but it is difficult to predict future scenarios, particularly over long time periods. Nevertheless, to accompany the climate change predictions used in this study (see Chapter 6), it can be noted that the current growth rate of approximately ~ 0.4% pa means the provincial population would increase to 1,336,811 by 2030, to 1,447,919 by 2050 and to 1,767,786 by 2100. More significantly, if the same geographic patterns of growth continue, most of this population growth is likely to be in the lowlands particularly urban areas, and at the expense of agricultural land.

2.2.4. Vulnerable Groups

2.1.4.1. The Poor

Poverty is one of the key determinants of the vulnerability of households and communities to climate change, and of their capacity to adapt[3]. Poverty is multi-

[3] In Vietnam, 'poverty' has been calculated by two ministries utilizing different levels or thresholds: by the General Statistics Office (GSO) under the Ministry of Planning and Investment (MPI) against the food poverty line and general poverty line; and by the Ministry of Labour, Invalids and Social Affairs (MoLISA) against the official poverty line. Both are

dimensional[4] and different aspects of poverty contribute to determining peoples' vulnerability to different stress factors brought by climate change. The livelihoods framework (DFID 2001) provides a useful basis for analysing poverty in the context of EbA, identifying five asset areas for consideration: natural, physical, human, financial and social. Thus poverty is configured by: lack of access to natural resources and ecosystem services; poor housing, remote location lacking essential infrastructure, lack of essential tools; lack of household labour, skills, health; lack of access to credit and lack of financial and food reserves to fall back on after a shock; lack of supportive social networks and political engagement. As some of these dimensions of poverty are alleviated, pressure on natural ecosystems often increases, causing degradation which in turn can increase peoples' vulnerability to climate change, and the possibility of falling back into poverty.

As mentioned above, Ha Tinh is amongst the poorer provinces in Vietnam, with 23.1% of the population counted as poor in 2010 compared to an average of 14.2% nationally, and 20.4% in the North Central region. Further, many more households are "near poor". In 2013, when 14.2% of households were "poor", a further 15.3% of households were "near poor" (2013). The resultant total of 29.5% is quite high - compared to the national total of 18%. Further, it is persistently high - while some households may escape absolute "poverty", fewer escapes "near poverty" and the near poor are at risk of falling back into poverty. It is widely accepted that extreme climatic events and climate change are exactly the kind of stressor that causes people to fall back into poverty, but provincial data demonstrating this, is lacking. Table 2.4 compares poor and near poor households over three years, showing how the number of poor households has declined significantly, while the near poor households have remained the same.

Reasons given for Ha Tinh's poverty include its distance from the country's main economic centres - Ha Noi, Da Nang and HCMC - and, more relevant to this study, its difficult climate. The area faces severe storms, floods regularly, and experiences both cold spells in winter and periods of extreme heat in summer.

based on income or income equivalents. Although the GSO uses an internationally accepted methodology, the one used by MoLISA is considered as the official poverty line. (UNDP 2012a, p: 3).

[4] From 2016-2020, Vietnam will adopt a national measure of multidimensional poverty, based on the Alkire-Foster method, which will show the disadvantages poor people face across five different areas: i) living conditions; ii) income levels; iii) access to education and health care; iv) access to information; and v) access to insurance and social assistance. (http://www.mppn.org/mppn_news/vietnam-moves-to-multidimensional-approach-to-poverty-reduction).

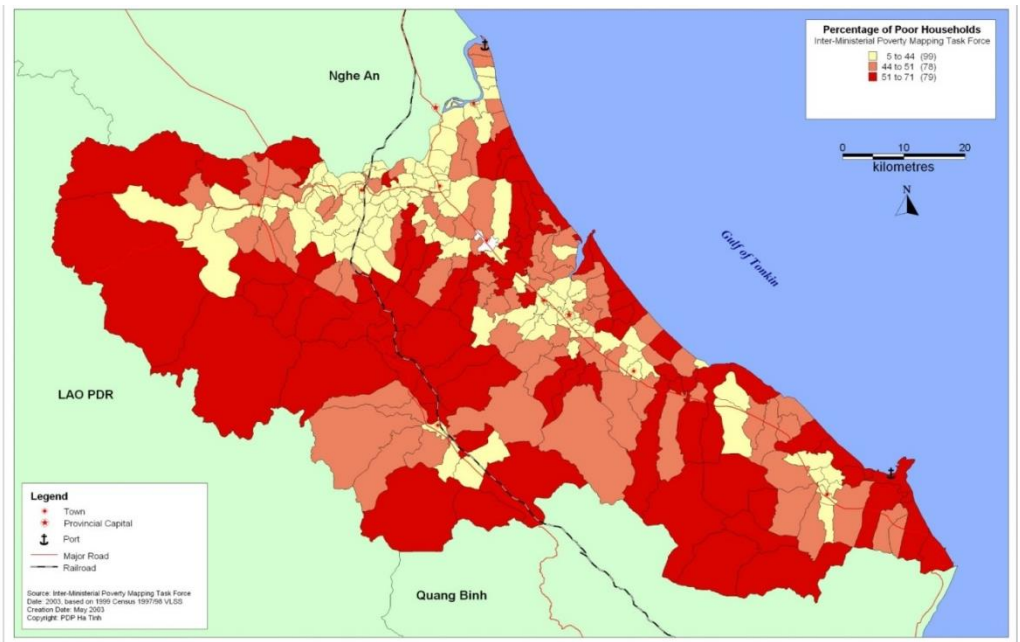
Table 0.4: Poor and Near Poor Households in Ha Tinh, 2010-2013

Status	2011		2012		2013	
	No. of households	%	No. of households	%	No. of households	%
Poor	80180	23.9	54449	17.4	45767	14.2
Near poor	57521	16.5	57252	16.2	53547	15.3
TOTAL	137701	40.4	111701	33.6	99314	29.5

Source: National Target Program for sustainable poverty reduction 2013

In Ha Tinh, the poverty rate is highest in the mountain and immediate coastal districts, and lowest in the densely populated rice growing areas. Map 2.5 presents the best available data, but this is from 2003. However, the incidence of poverty remains highest in the lowlands, due to the density of the population.

Map 0.5: Poverty rate of communes in Ha Tinh (% poor households), 2003



Poverty is now primarily a phenomenon of remote rural areas - the inland districts of Huong Khe, Vu Quang and Huong Son. Ethnic minorities are said to experience the highest levels of poverty, but ethnic populations in Ha Tinh are low (see below) and provincial poverty data is not disaggregated to demonstrate this. It is also most prevalent amongst farmers and amongst fishing families (see below). According to government informants, existing data masks significant pockets of poverty, notably amongst the fishing communities that are part of the relatively most prosperous coastal communes. Data to support this account is lacking.

The main reasons for household poverty in Ha Tinh are given as:

- Lack of means of production including access to good cultivable land
- limited access to credit
- high dependency ratio (many children/old/sick but few labourers)
- lack of education and skills
- lack of employment opportunities

Unemployment rates are approximately 4% of the workforce (2010).

Elsewhere in Vietnam, poverty rates are also typically higher amongst female-headed households, but data on this for Ha Tinh are lacking.

Poverty Alleviation

The most recent data for poverty alleviation in Ha Tinh, shows the poverty rate decreasing from 23.9% in 2010, to 5.8% in 2015. The near poor rate declined from 17.6% to 8.9% in the same period. (DOLISA pers comm)

Poverty alleviation in Ha Tinh, as in the rest of Vietnam, has been driven mainly by economic growth and restructuring of the agricultural sector towards commodity production, but there have also been several more targeted poverty alleviation programmes, notably National Target Programme (NTP) - Socio-economic Development of the Most Vulnerable Communes in Ethnic Minority and Mountainous Areas in Vietnam aka Programme 135 Phases I-III (1998-2015) and Resolution 30a on Rapid and Sustainable Poverty Reduction (2009 - 2020).

All 7 ethnic minority communes in Ha Tinh have been included in P135, but despite big investments, the core problems of sustainable economic production have not been fixed (Ethnic Minority unit of PPC, pers comm).

Poverty alleviation in Ha Tinh is built around developing and promoting household economic models, with over 9000 models in operation. In Agriculture, Forestry and Fisheries, fifteen models have been developed, including six crop-based, eight livestock based and one for fish sauce. The PPC reports that the models have created over 500 jobs for the poor and lifted 488 households out of poverty. However, it is unclear whether climate change has been considered in the development of these models (Ha Tinh, PC 2016). The programme under Resolution 30a supports communities in Vu Quang and Huong Khe Districts.

Resolution 80/NQ-CP 2011 established the policy to accelerate poverty reduction in the poorest parts of the country, setting an annual poverty reduction target of 4% pa for 2011-2020, compared to the national target of 2%. The National Targeted Programme for Sustainable Poverty Reduction 2012-2015 (NTP-SPR) implements this policy to improve the well-being and livelihoods of the poor, particularly those in mountainous and ethnic minority areas.

The inter-ministerial NTP - New Rural Development (2010-2020), managed by MARD, does not integrate climate change adaptation or disaster risk management into its commune level plans, although there are some environmental targets.

As poverty is a key determinant of vulnerability to climate change and often of capacity to adapt to it, these declining poverty rates should be good news. However, increased household prosperity can translate into an increase in unsustainable use of resources and thus increase vulnerability to certain impacts of climate change. Further studies are needed to understand the relationship between poverty alleviation and ecosystem-related climate change vulnerability at the provincial-scale.

2.1.4.2. Ethnic Minorities

The population of Ha Tinh is overwhelmingly of Kinh ethnicity; in 2015 only 0.16% of the total belonged to ethnic minority groups, amounting to 1972 individuals in 492 households. Table 2.5 presents all the population data available and shows the ethnic groups live in seven villages in seven communes in three districts: Huong Son, Huong Khe and Vu Quang, where they constitute 0.5%, 1.4% and 0.8% of their district populations respectively.

Table 0.5: Ethnic minority population of Ha Tinh, 2015

District	Commune	Village	Group[5]	Population			
				District	EM HH	EM Ind	% EM
Huong Son	Son Kim 1	Dai Kim	Dao		77	245	
	Son Kim 2	Thuong Kim	Dao		91	384	
				115,910	***168***	***629***	***0.5***
Huong Khe	Huong Trach	Soi Lim	Muong		125	476	
	Huong Lien	Rao Tre	Chut		34	137	
	Phu Gia	Phu Lam	Lao		61	256	
	Huong Vinh	Giang II	Chut		11	31	
				102,000	***231***		
Vu Quang	Huong Quang	Kim Quang	Lao	29,760	93	443	0.8
TOTAL	**7**	**7**	**4**		**492**	**1972**	

Source: Ethnic minority unit, Ha Tinh PPC, 2015.

In total there are 34 different minorities present in Ha Tinh, but only four of these "live in groups" and come to the attention of the Ethnic Minority Unit[6] of the PPC. The largest, the Muong, is a Vietic language speaking group closely related to and well-assimilated with the Kinh. They number over 1.2 million people nationally[7], but fewer than 500 Muong live in Ha Tinh, mostly in Huong Khe district. The Dao are a Hmong group, and have a substantial national population of over 700,000 people, but only 630 people in Ha Tinh, mostly in Huong Son district. The Lao belong to the Tai-Kadai language group; as the name suggests, their main

[5] Many minority groups are known by more than one name. The Dao, also known as the Yao or Mien, are called "Man" by the Kinh, and appear as such in some DOLISA reports.

[6] Ha Tinh PPC has only a small Ethnic Minority Unit, with three staff members, not the usual Sub-Committee for Ethnic Minority Affairs (SCEMA) that provinces with higher ethnic minority populations have.

[7] All these national population figures are taken from the 2009 census.

population is in neighbouring Laos, but around 14,000 live in Vietnam. They represent the largest minority group in Ha Tinh, with some 700 people in Vu Quang and Huong Khe. All three of these groups are relatively well-assimilated with the Kinh, having good levels of education and higher engagement in commercial production and other enterprise (Ethnic Minority Unit, PPC, pers comm).

The fourth group, the Chut are also linguistically related to the Kinh, but nationally number only around 6,000 people and live more traditional ways of life, in relative isolation. About 170 people in 40 households live in two villages in Huong Khe district, close to the other main centre of Chut population in northern Quang Binh. About 40 years ago the Ha Tinh groups lived a semi-nomadic way of life in the mountain forests, practising shifting cultivation and forest product gathering, but have been resettled to permanent villages closer to commune centres and allocated land for cultivation. They still collect forest products, on request from buyers. They are the target of many different government programmes, including food subsidies. Despite these programmes, poverty amongst the Chut is said to remain at 100%. Subsidies are now being offered to Chut youth who marry with Kinh partners. This is seen as a way to break out of this poverty, but threatens the Chut's very identity.

2.1.4.3. Livelihoods and Vulnerability

Livelihoods that are dependent on natural resources tend to be more vulnerable to the changing climate. These typically include fishing and agriculture. Further, the less diversified a family's livelihood is, the more vulnerable it is likely to be since if one livelihood suffers impacts of climate change, the family lacks alternatives to fall back on.

Specific studies on the relationship between livelihoods and poverty and thus vulnerability to climate change in Ha Tinh are lacking. However, it is generally accepted that jobs or livelihoods dependent on renewable natural resources (agriculture, forestry, fisheries) are more vulnerable to climate change because the resource base itself is vulnerable - to drought, storms, flooding, pests and diseases, wind and the like. Chapter 5 examines livelihoods in Ha Tinh in the context of about 30 socio-ecological systems. The SES then provide the basis for assessing exposure, sensitivity and vulnerabilities across the province.

A comprehensive study of the labour market and employment in Ha Tinh is being conducted in 2016, but the data on employment and livelihoods available for the present study is limited (DOLISA pers comm). The workforce, defined as persons over 15 years of age[8], totalled 643,928 people or 52% of the population. Available information for 2009, breaks down the provincial workforce into three main areas. Obviously this obscures a lot of diversity important for understanding vulnerability to climate change. Over 56 % of the workforce was engaged in agriculture, forestry and fisheries, activities that are inherently vulnerable to climate events and change. The other main sectors are industry (including mining and processing and

[8] According to the International Labour Organisation definition, no upper age limit is stated.

construction (13.8%) and 29% in "other fields". About 8% of the total workforce is employed in the state sector and all the rest in the private or household sectors, apart from 285 people employed in foreign companies. Over 60% of the workforce has no vocational training. Many of these will be in waged employment, and their livelihoods less vulnerable to climatic events and changes.

2.3. Conclusions

This chapter has assessed and mapped the key social data relating to climate change and ecosystem-based adaptation to it, at the provincial level Ha Tinh: population, vulnerable groups, poverty and livelihoods.

The densest populations in Ha Tinh are in the coastal lowlands. Here too are the largest numbers of poor people, who are on the front-line for many of the region's most severe climate events. But in the lowlands, people also have the best communications, infrastructure, market access and services, the greatest scope for alternative livelihoods and the best institutional support in time of need. Although the provincial population is increasing slowly, the fastest increase is taking place in the lowlands, where exposure is greatest. The growing population is accompanied by increasing urbanisation, which may exacerbate certain climate related problems - like flooding and heat stress.

The poorest and most marginalised people in Ha Tinh are the ethnic minorities living in the mountains. The poorest groups were resettled in the last few decades and remain in transition between their traditional livelihoods dependent on swidden cultivation and gathering forest products and more modern ways of life based on cash crops and commerce. As such, they are potentially extremely vulnerable to climatic event, and government programmes, though well-meaning, neglect to engage with the people in planning their own futures, and often create dependencies which can undermine initiative and adaptation capacity. Their populations are very small. While on one had this suggest they are not a high priority, on the other, not a lot of resources would be needed to address their particular climate change vulnerability.

The majority of the Ha Tinh workforce is engaged in agriculture, forestry and fisheries - all based on natural resources and all vulnerable, to a greater or lesser extent, to extreme climatic events and to climate change.

This initial analysis suggests that, from the social perspective, priorities for local-level assessment and adaptation action would be the poor inshore fishing communities along the densely populated coast, rice farmers and the few ethnic minority villages. In the next chapter, this social perspective will be put together with the perspectives from ecology and economics to develop, describe and map Ha Tinh's socio-ecological systems and explore vulnerabilities in more detail.

2.4. References

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