



**Human  
Security,  
Today and  
Tomorrow**

Thailand Human Development Report 2009

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# Preface

In 1999, the first Thailand Human Development Report introduced the concept of human development and surveyed the state of human development in Thailand amidst the first severe Asian economic crisis in decades.

The second report, launched in 2003, focused on “community empowerment”. The choice of the thematic focus was based on the realization that communities not only constitute the most significant social safety net, but also the dynamic forces behind the on-going vibrant and broad-based social and democratic reforms in Thailand.

“Sufficiency Economy” was the theme of the third report, launched in 2007. It reflected the nation’s search for a more balanced development path, guided by His Majesty The King’s initiatives.

It is with great pleasure that the Ministry of Social Development and Human Security (MSDHS) and the United Nations Development Programme in Thailand (UNDP Thailand) present the fourth Thailand Human Development Report “Human Security: Today and Tomorrow”. This thematic focus was selected by a group of high-level public officials, well-respected scholars, civil society leaders, UN colleagues, and UNDP Thailand. It reflects the society’s cautious optimistic perspective on the global and national development situations.

Using the human security approach, the report surveys a whole spectrum of human development issues, draws attention to old risks and threats that persist, and identifies new risks and threats that are emerging with changes in the economy, society and the country’s position in the world.

Meeting the challenges of minimizing and managing the risks at individual, community, and national levels requires a high-level and long-term commitment, as much as broad-based and continuous efforts. Since its establishment in 2002, the MSDHS has played a leading role in advocating policies and legal development, as well as implementing important programmes, to enhance human security for Thais and non-citizens living in the country. In recent years there have been significant developments toward the enhancement of the security of the most vulnerable groups of people, e.g. the protection of women and children, provisions for the elderly and persons with disabilities, the prevention and suppression of trafficking and the accommodation of ethnic minorities without full citizenship, displaced persons, migrant workers and stateless persons. The Universal Health Care Programme has enhanced the quality and security of lives of a large part of the population. The old-age fund, now under serious consideration, would represent another landmark development.

But much remains to be done. This report presents a shortlist for action. It is hoped that the report raises awareness, fosters cooperation, and stimulates actions toward more secure livelihoods for the people and sustainable development for Thailand.



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# Acronyms

ADB	Asian Development Bank
AOT	Airports Authority of Thailand
ASEAN	Association of Southeast Asian Nations
ART	antiretroviral therapy
dBA	A-weighted decibels
EIA	environmental impact assessment
FAO	Food and Agriculture Organization
FIVMS	Food Insecurity and Vulnerability Mapping System
GDP	gross domestic product
GMO	genetically modified organism
HAI	Human Achievement Index
HIV/AIDS	human immunodeficiency virus/acquired immunodeficiency syndrome
MDGs	Millennium Development Goals
MOAC	Ministry of Agriculture and Cooperatives
MOPH	Ministry of Public Health
MP	member of the parliament
MSDHS	Ministry of Social Development and Human Security
NESAC	National Economic and Social Advisory Council
NESDB	National Economic and Social Development Board
NGO	non-governmental organization
NSO	National Statistical Office
OAE	Office of Agricultural Economic, Ministry of Agriculture and Cooperatives
OECD	Organization for Economic Cooperation and Development
ONEP	Office of Natural Resources and Environmental Policy and Planning
PAD	People's Alliance for Democracy
PERC	Political and Economic Risk Consultancy
SARS	Severe Acute Respiratory Syndrome
STI	sexually transmitted infections
TB	tuberculosis
TDRI	Thailand Development Research Institute
TEI	Thailand Environment Institute
UDD	United Front of Democracy against Dictatorship
UHC	Universal Health Care
UN	United Nations
UNAIDS	United Nations Joint Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNIFEM	United Nations Development Fund for Women
UN IPCC	United Nations Intergovernmental Panel on Climate Change
WHO	World Health Organization

# Overview

## Chapter 1: Introduction: Thailand and human security

The idea of “human security” emerged in the early 1990s. The ending of the cold war saw a global reduction in armed conflict and political tension. The phrase “human security” was part of a deliberate attempt to switch attention from the security of states to the security of individuals. *The UNDP Human Development Report 1994* offered a simple definition: “Human security can be said to have two main aspects. It means, first, safety from such chronic threats as hunger, disease and repression. And second, it means protection from sudden and hurtful disruptions in the patterns of daily life – whether in homes, in jobs or in communities.”

In Thailand in the mid and late 1990s, there was a similar trend to redefine the scope of security. As part of a major ministerial reorganization in October 2002, the Ministry of Social Development and Human Security (MSDHS) came into existence. In 2008, the ministry used a participatory process of nationwide seminars and networking to develop a human security strategy for Thailand with three elements: self-reliance; community empowerment; and devotion to society.

The human security approach provides a way to survey the whole spectrum of human development. It can help to redraw attention to old risks and threats that persist despite familiarity, and to identify new risks and threats that arise with changes. In short, it provides a tool to identify priorities – the old problems that remain but are ignored because of familiarity, and the new issues that are emerging with changes in economy, society and the country’s position in the world.

In discussions on human security in the four regions of Thailand, members of civil society and officialdom showed personal concerns over health and social concerns over politics (corruption and violence), the environment, increasing numbers of migrant workers, and human trafficking. They were apprehensive that social disparities created injustice that was the foundation of rising violence.

## Chapter 2: Human security today: An audit

This report surveys the state of human security in Thailand today from six dimensions: economic security, food security, environmental security, health security, personal security and political security. Over recent decades, as a result of economic growth, an expanded role for government and an active civil society, many of the harshest threats to human security have been overcome. On any international scale, Thailand should be considered more than “moderately secure.” But some groups are still at risk, and some problems have defied solution.

**Economic security.** Thailand’s sustained growth over the past generation has made most people more secure, more of the time. But the pattern of that economic growth has increased risks, especially for the large proportion of the population dependent on the informal economy.

Poverty incidence has declined from 21 percent to 8.5 percent between 2000 and 2007, but pockets remain. In the rural areas, 1-in-10 people are still in poverty. Some simply have insufficient land. Others face structural difficulties and fall outside any form of safety net. In the urban areas, many people still face intermittent poverty due to insecurities of income and unemployment.

The social security net has expanded steadily over the past generation. The recent introduction of a universal health care scheme has significantly increased health and economic security. However, the large proportion of the population in the informal economy remains unprotected from other risks.

For economic security in the long term, government must address the two major sources of economic insecurity, namely the high external dependence, and the high proportion of people employed in the informal sector.

**Food security.** Thailand is a major food exporting country. Availability of food has improved with both higher local production and growing imports. Thailand has the capacity to produce both food and fuel crops, but may face trade-off issues in the future.

Access to food is still a problem for the rural and urban poor. In the rural north and northeast, and in the urban areas, there are poor households vulnerable to price rises.

Food safety is a growing concern because of risk of contamination during preparation, chemical residues, low-quality manufacturing, and new diseases. Monitoring is inadequate and controls are poorly enforced. Despite some problems, the current picture of food security is relatively benign, but there are uncertainties over the future because of rivalry over water, the decline of the small family farm, and the prospects of climate change. These issues are addressed in chapter 3.

**Environmental security.** The tsunami tragedy of 2004 has led to greatly increased awareness of natural disasters, and led to several projects for monitoring and prevention. Major typhoons occur rarely but are highly devastating.

Each year on average around 4 million households are affected by drought and 1 million by flood. In bad years the numbers can rise to 7 or 8 million. The climate is already becoming more erratic, and the issue of water management more critical.

Growing population and economic activity exert relentless pressure on the stock of natural resources, particularly forests, water, and marine resources. Communities dependent on these resources are most vulnerable to the impact. Just enforcing existing laws (e.g., on marine equipment), and completing proposed legislation (e.g., the community forestry bill) would improve their security.

Management of pollution and waste is generally weak. Better zoning would assist communities who find themselves beside industrial zones, quarries, and power plants. More investment is needed in facilities to process and recycle the growing volumes of domestic and industrial waste.

In recent years, 19 activists have been murdered for their part in campaigns to protect natural resources. These deaths dramatize the vulnerability of natural resources. Government agencies have been active in attempts to reduce conflict over natural resources through more participation, attention to local wisdom, area-based management, and other strategies. But overall, environmental management still remains weak.

**Health security.** Major infectious diseases have become less threatening. The vulnerability to HIV/AIDS has lessened somewhat owing to medical advances, public awareness, and social campaigns, but vigilance is still required. The rising health threats are the diseases of lifestyle and environment – cancer, heart disease, stress – and international epidemics.

By international standards, Thai people are at high risk from motor accidents. Young male motorcyclists are the most imperilled. Public campaigns have limited success in denting the rising trend of accidents. Abuse of alcohol is a major factor.

The Universal Health Care scheme has made a major difference in access to health care. But challenges lie ahead in sustaining the scheme at affordable levels, and retaining physicians tempted by alternative employment in the private sector. The Thai Health Promotion Foundation hopes to make prevention a much larger element in health care.

**Personal security.** Thai people run a relatively high risk of being victims of crime, especially violent crimes against the person. Thailand has been slow at implementing clearance of landmines. In the far south, the population faces daily violence from insurgency.

Drug use is again rising. The availability of cheap methamphetamine allows drugs to reach a wide market. Advances in rehabilitation and treatment have been significant, but attempts to disrupt the trade are ineffective, largely because it is so lucrative.

Domestic and sexual violence, disguised by a culture of non-exposure, are significant issues that need more campaigns for raising public awareness.

Thailand is a source, destination, and transit country for human trafficking. The problem now has a high profile, and is the subject of cooperation with neighbouring states. Government has passed legislation and established an institutional framework for tackling this problem in a more concerted fashion.

**Political security.** Over much of the past generation, most Thais would probably have judged that their political security was improving. Over the last five years, that judgment has almost certainly changed. Throughout the country, frustration with the practical operation of the political system is prompting rising levels of conflict and polarization among the people.

Thais have had extensive civic and political rights formally guaranteed by a constitution since 1997. In practice, the embedding of democratic systems has been repeatedly disrupted by military coups.

Parliament is heavily dominated by male business people, a small fraction of the population, while most other groups are under-represented. Political parties do not serve as channels for people to affect policy-making. Decision-making remains highly centralized with limited opportunities for participation. Corruption is perceived to be a major barrier to efficient and responsive government. Decentralization has helped only very partially in making government more accessible and responsive. Recently, the judiciary has taken a more active political role, but faces accusations of bias.

**Overall.** The major threats to human security from poverty and disease have significantly retreated. But Thai citizens in general are still unduly at risk from crime, traffic accidents, food safety, and pollution, and specific groups are vulnerable to human trafficking, drugs, domestic and sexual violence, destruction of natural resources, and political disorder. In most cases, solutions to these problems are known, but there are failures of implementation.

### Chapter 3: Emerging issues for a secure tomorrow

By and large the big problems now facing Thailand are not those of meeting basic needs. The emerging problems are the result of the country's relative success at becoming a semi-industrialized country in a globalized world.

This chapter highlights five human security issues which are all in different ways a product of this transition. None of these problems is unknown. Indeed, they are widely discussed. Yet none of these has the prominence on the national agenda that it deserves. All five issues pose multiple problems for human security in the present, and these problems promise to grow worse in the future if they are not addressed. This chapter also sketches how the prospect of climate change is likely to exacerbate human insecurities in the future.

**Managing water.** Of all the natural resources that are under pressure, water is the most critical for human security. Water is vital for human life. Water is key to the rice agriculture that provides food security for the country and economic security for a large proportion of the population. The industries and urban centres that have emerged over the past generation not only compete for the inelastic supply of water, but threaten it with various forms of contamination, creating issues of health security. On top of this, the supply of water is becoming more erratic because of climate shifts.

The variety of the issues surrounding water signals the complexity of the problem. Talk of a "water crisis" has been around for almost two decades. Many plans have been laid. Relatively little has been done. Much of this inertia is a function of the sheer complexity of the problem, magnified by the competing interests of different water users, and fragmentation of responsibility within government. Water is a big problem that needs to be dealt with in a big and integrated way.

How to move towards a new era of water management in Thailand? The first step is to accept that there is a problem, that it is an immense problem, and that it needs to be confronted in an integrated manner. Government should consider unifying the management of water under a single umbrella agency with real authority. There is a need for a National Water Plan, covering issues of supply, allocation, and quality. The plan should draw on the best technical expertise, as well as involve the participation of all stakeholders. Government will need to commit larger resources to the management of water, including larger budgets and more skilled personnel.

**Deciding the future of the small farmer.** As Thailand has switched its attention towards industrialization and urbanization, agriculture has suffered from neglect. Investment has been low. Public resources devoted to the sector have been minimal. The natural resource base on which agriculture depends has deteriorated. Because the system of small-scale family farming that prevails in Thailand is so resilient, this steady deterioration can go almost unnoticed. But there are signs that the process is approaching a critical point.

Small-scale farms are often uneconomic and survive only because they are subsidized by family members working elsewhere, and by inappropriate government policies. The spread of contract farming and plantations of fuel crops are beginning to compete for land. Government support for sustainable small-scale farming has been inadequate. Family farms are failing to reproduce themselves. The average age of the farmers is now above 50 years. A major change looms.

The implications for human security are manifold. Food security may be at risk. The “informal social security” provided by the village household will disappear. There is a national decision ahead over whether to allow this decline to continue, or whether the costs are too high.

If any public effort is to be made to sustain the family farm, several changes will be needed. A fair distribution of land is critical. Many governments have promised action, but none has delivered. More investment is needed in water management given its critical importance for small-scale agricultural production. Better systems are needed for managing agricultural prices. In 2009, the government introduced a farmer’s income guarantee system to replace the old system of pledging that benefited the trader and the larger farmer. More research and extension work is needed to develop crop strains and other technologies appropriate for the small farm. A rethink is needed on the role of education in the country’s agricultural future. Government should continue to take a precautionary attitude towards GMOs, and show more commitment to the support of sustainable and organic agriculture.

**Accommodating non-citizens.** Across the world, globalization has reduced the effectiveness of national borders as barriers to movements of people. Thailand is now home to a large number of people of other nationalities. Some are displaced persons left over from conflicts which have racked the region in the past half-century. Some are economic migrants attracted by Thailand’s relative economic success. Some are people who have failed to acquire nationality because of their own incompetence or official failure. The numbers are now large; the best estimate is around 3.5 million people, but the exact magnitude is unknown.

These “non-citizens” themselves suffer from severe human insecurity. Moreover, they are now present in sufficient measures to provoke feelings of insecurity among citizens. At present there is little apparent awareness of the scale of the issue, and very limited debate on what needs to be done.

The presence of many of these peoples is testament to an underlying humanitarianism in Thai policy making. This humanitarianism should guide a new look at the issue of non-citizens in the light of changing international circumstances.

Many of the long-resident ethnic minorities have been granted rights to full citizenship by cabinet orders, but the implementation of these orders is slow. To ensure that problems of statelessness are not passed down to future generations, the rights to citizenship of those born within the borders should be properly implemented. Migrant labourers should be properly registered and allowed the same access to legal and social protection as Thai nationals. More positive efforts are needed to meet the needs of migrant workers who benefit the national economy, including language training and other forms of socialization.

**Confronting the threat of persistent inequality.** Social and economic inequality often tends to worsen at certain stages of development. In the era of neoliberal globalization, inequality has deepened both within countries and across countries. Thailand has been prey to these trends. It also appears to have grown more unequal than neighbouring countries. Inequality has large implications for human security because it means differentiated access to resources and facilities of all kinds. Inequality has special significance for political security. Although there is no simple match between inequality and political conflict, it is hard to deny that Thailand's deep inequality has underlain the growing social and political conflict of recent years.

Putting inequality on the national agenda sounds easy but in practice is very difficult. The fact that several national plans have enshrined the goal of combating inequality yet virtually no policies have emerged suggests that there are powerful forces against acceptance of this goal. An important beginning is the realization that the degree of equality and inequality in society is a matter of social choice, not the result of the operation of market forces. Countries such as Japan, Norway, and Sweden self-consciously value the benefits of social cohesion that come from greater equality.

Perhaps what is needed first of all is more prominence for the issue in national debate, and more open discussion of the costs and benefits of trying to move towards a more egalitarian society.

Removing regressive features of government taxation and spending, improving the quality of education, rectifying the distribution of land, legislating against monopolies, and increasing the overall amount of public goods – all these will help moderate inequality to some extent. There are more complex issues involved in combating the political and social structures that underpin inequality. The pervasive role of "influence" to gain preferential access to resources of all kinds is a major cause of inequality. This will only be undermined by more open participatory politics, better mechanisms for enforcing rights, an overhaul of the police force, easier access to judicial process, and other measures to strengthen the rule of law.

**Managing the rapid transition to an ageing society.** Thailand has begun the transition to an ageing society. Because of the age profile, this transition will be rather quick.

The responsibility of children to look after parents in old age is deeply embedded in the culture. Most elderly are still cared for by children or grandchildren. But this arrangement is coming under strain as the society becomes more urbanized, families fragment into nuclear units, and more women are working in jobs that make it difficult to provide care for the elderly. The proportion of the elderly living alone is still small, but doubled from 3.6 to 7.8 percent over 1994 to 2007.

Government has made good preparations. Data has been collected, legislation passed, and policies put in place. The aim is to preserve and prolong the traditional family responsibility for the elderly. Family and community are designated as the primary providers of care, with government agencies offering support. At present only 15 percent of the elderly are supported by a pension. These numbers will increase as a result of a provident fund scheme launched in 1997, and a pension component of state social security begun in 1999. But 24 million people working in the informal sector are not covered by any scheme. Government is currently considering a voluntary scheme for these people.

The rapid transition will put special pressure on the health services, especially community hospitals. Better provisions are needed for home-based care. More needs to be done to keep the elderly active and productive. In many sectors, the retirement age could be extended, and more flexible working arrangements introduced.

**Understanding the prospect of climate change.** Besides these five above issues that have emerged as part of Thailand's growth and social change, another global issue with large consequences for human security is climate change.

Thailand's carbon emissions are high compared to the level of its economic development, and have grown very rapidly in recent decades, largely because of inefficiency in power generation. Thailand is now an average world citizen in terms of carbon emissions – with roughly 1 percent of global population, and responsible for roughly 1 percent of emissions. In the near future, Thailand may have to conform to global targets for reducing emissions, and this may be difficult given the recent record. More preparation is needed.

Climate change is already affecting human security through more erratic patterns of flood and drought. Recent research and modelling predict rising temperatures that will affect crop yields and patterns of disease, more erratic rainfall patterns which will exacerbate water issues, and rising sea levels that will inundate large stretches of Thailand's coastline. More research is needed on ways to prepare for these changes.

Besides these direct physical effects, climate change will have other indirect impacts. The markets will anticipate the future effects of climate change, leading to shifts and panics presaged by the food price spike of 2008. Thailand is surrounded by areas with large populations that are highly at risk from climate change – particularly in Bangladesh and the Mekong Delta. Thailand may be affected by large population shifts in neighbouring areas.

These six issues will have an impact on human security in the years ahead. They are big issues that require correspondingly big solutions, drawing on the resources of government and civil society. They deserve more attention, and higher priority on the national agenda.

## Chapter 4: A short-list for action

Based on the review of data, and on the opinions canvassed from Thai officialdom and civil society, we offer a short-list of initiatives which can have a major impact on Thailand's human security over the near future.

- Ensure adequate support for older persons by safeguarding existing schemes against demographic shifts, providing for those working in the informal sector, and ensuring a safety net for those most at risk.
- Plan now to ensure adequate staffing of public health services over the short and medium term.
- Make strengthening the security of those in the informal sector a specific target of policy-making, and increase the institutional support and funding for community schemes.
- Move to reduce the social acceptance of domestic and sexual violence by raising public awareness and restraining the media and entertainment industries.
- Deliver on the commitment to eliminate human trafficking within a short deadline.
- Broaden the framework of policy-making on migrant labour to ensure that social issues affecting both migrants and host community are properly resolved.
- Manage the balance between fuel and food crops through policies which promote the interests of the small farmer.
- Launch a major process to overhaul water management, covering issues of supply, distribution and quality, with a time scale of several decades.
- Strengthen environmental management by incorporating new knowledge and techniques into a revision of the primary legislation.
- Put the goal of an equitable society on the national agenda, and make a start with some basic reforms in government taxation and spending.
- Reduce political conflict by making government more open and accessible through better channels to affect policy-making and more space for dissent and debate.

# Part Human Security

## 1. Introduction

## 2. Human security today: An audit

- Economic security
- Food security
- Environmental security
- Health security
- Personal security
- Political security
- Tailpiece: A time of transition

## 3. Emerging issues for a secure tomorrow

- Managing water
- Deciding the future of the small farmer
- Accommodating non-citizens
- Confronting persistent inequality
- Managing rapid change to an ageing society
- Understanding climate change and its consequences
- Tailpiece: Shifting world, shifting problems, shifting opportunities

## 4. A short-list for action

## References

- Background papers
- Works cited

# 1. Introduction:

## Thailand and human security

### The human security approach

The idea of “human security” emerged in the early 1990s. The ending of the cold war saw a global reduction in armed conflict and political tension. The phrase “human security” was part of a deliberate attempt to switch attention from the security of states to the security of individuals. It was also an attempt to focus development efforts on mitigating risks and preventing disasters. The UNDP *Human Development Report 1994*, the first major document to use the concept, summed it up this way: “Human security is a child who did not die, a disease that did not spread, a job that was not cut, an ethnic tension that did not explode in violence, a dissident who was not silenced.”<sup>1</sup> Human security is an integrative framework. People at risk from war are also at risk from famine. Epidemics have no respect for national borders. Most development issues have to be addressed at both national and global levels. The 1994 report offered a simple definition: “Human security can be said to have two main aspects. It means, first, safety from such chronic threats as hunger, disease and repression. And second, it means protection from sudden and hurtful disruptions in the patterns of daily life – whether in homes, in jobs or in communities.”<sup>2</sup>

This early report also offered a preliminary scoping of the components of human security.

- **Economic security:** an assured basic income and minimum job security, while the threats to economic security are rampant uncontrolled inflation, economic depression and financial crises.
- **Food security:** questions of access often are in fact more important than simply “having enough to go around,” the threats come

therefore from unequal distribution, while obviously famine and starvation due to real food shortages are the worst-case threats.

- **Health security:** death and illness linked to poverty, unsafe and unclean environments, access to healthcare, and the problem of pandemics such as HIV/AIDS and infectious diseases.
- **Environment security:** degradations of local and global ecosystems, one of the major challenges being access and cleanliness of water.
- **Personal security:** against threats of sudden physical violence exercised by the state, by other states in war, or from other individuals from other groups due to ethnic tensions, also encompassing specific personal security of women against violence and exploitation, or of children against all forms of child abuse.
- **Community security:** to tackle threats such as intra-community strife, tensions, or hurtful practices directed against certain members of the community, such as women.
- **Political security:** against torture, political repression, ill treatments and disappearances.

Since then, the concept and the scope have been redefined in many different ways. By 2006, the human security framework had been used in forty-two National Human Development Reports, a handful of other UN surveys, and in many other documents.<sup>3</sup> There is no need to review the history here. The early definition and scoping capture the essentials of the approach.

<sup>1</sup> UNDP, *Human Development Report 1994*, New York and Oxford: Oxford University Press for the UNDP, 1994, p. 22.

<sup>2</sup> *Ibid.*, p. 23.

<sup>3</sup> Richard Jolly and Deepayan Basu Ray, *The Human Security Framework and National Human Development Reports: A Review of Experiences and Current Debates*, National Human Development Report Occasional Paper 5, 2006.

## Thailand and human security

In Thailand in the mid and late 1990s, there was a similar trend to redefine the scope of security. In its strategic plan, the National Security Council proposed a human centred approach:

*Develop the capacities of society and its members to cope with social changes. Emphasize human equality, coexistence amidst cultural diversity, and the ability to use diversity as the driving force in solving problems. Create an environment conducive to the development of the people's and society's capacities by improving all aspects of the environment to pave the way for such development.<sup>4</sup>*

The Eighth National Economic and Social Development Plan, launched in 1997, did not use a human security framework but nevertheless represented a major effort to shift development priorities away from economic growth and national security (narrowly defined) to a broad range of human development goals.<sup>5</sup> The same orientation has continued through its two successors.

As part of a major ministerial reorganization in October 2002, the Ministry of Social Development and Human Security came into existence. In 2008,

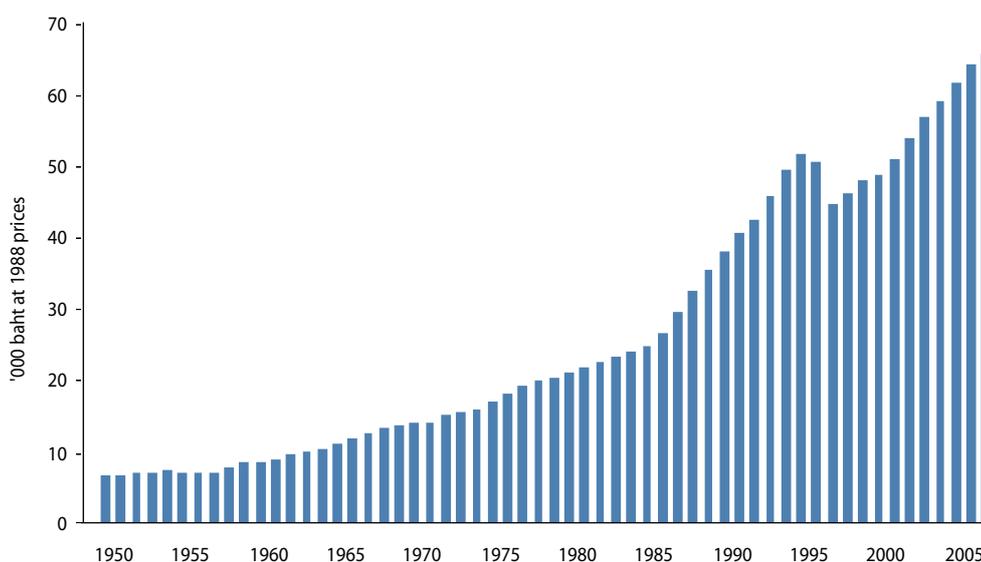
the ministry used a participatory process of nationwide seminars and networking to develop a human security strategy for Thailand with three elements: self-reliance; community empowerment; and devotion to society. The ministry aims to empower families to be self-reliant, and to strengthen social capital using local wisdom, local resources, and good governance.

### Why this approach?

Almost all of the forty-two National Human Development Reports on the theme of human security deal with countries that are either currently embroiled in war or severe internal conflict, have just emerged from war, or have recently undergone a major political transition (for instance, several post-Soviet states). In general, the framework has been applied to situations where people are suffering from extreme forms of dislocation.

Thailand is evidently not in that situation. The country is not beset by war. The situation in the far south is a tragedy in itself and a source of national concern, but does not disrupt the daily life of the majority of Thai citizens. Although Thai politics are wayward, there has been no jolting transition between fundamentally different systems. Why then view Thailand through the prism of human security?

**Figure 1.1 Real GDP per head, 1951-2005**



Source: NESDB, quarterly GDP results

<sup>4</sup> Office of the National Security Council, "National Security Policy on the Southern Border Provinces." Cabinet Resolution, 7 September 1999 (T).

<sup>5</sup> Government of Thailand, *Eighth National Economic and Social Development Plan (1997–2001)*, Bangkok: NESDB, n.d., see especially the preamble (T).

Over the past generation since the mid-1980s, Thailand has experienced a dramatic transition in its economy, and, as a result, a transition also in the country's conception of itself. Since the mid-1980s, the average real per capita income has roughly tripled (see Figure 1.1).<sup>6</sup> This single change has enormous implications. People's economic capacities have changed. So also have their aspirations and perhaps their fears too.

A generation ago, agriculture was the livelihood for two-thirds of households, but that proportion has now shrunk to under two-fifths. The country has ceased thinking of itself as an agrarian society at heart.

In addition, the country's exposure to the outside world has utterly changed. Thailand was integrated into the world economy at some level in the 1980s. But now the major drivers of the economy are foreign trade, foreign investment and flows of tourism.

The Asian crisis of 1997 brought an end to this era of rapid growth, and prompted soul-searching in new directions. Though the crisis impact was swinging, the recovery came relatively quickly. Thailand now confronts problems that are very different from those of a generation ago. Thailand is now a semi-industrialized country with an economy greatly exposed to the world. Many more people live in urban areas. Natural resources, which only recently seemed to be present in pristine abundance, are everywhere under threat. Old health threats have diminished while new maladies have spread with growing prosperity. The age profile is changing rapidly. Growing social complexity has prompted fiercer political competition. Now is a time to reflect on the changed social realities arising from this economic transition.

The human security approach provides a way to survey the whole spectrum of human development. It can help to redraw attention to old risks and threats that persist despite familiarity, and to identify new risks and threats that arise with change. In short, it provides a tool to identify priorities – the old problems that remain but are ignored because of familiarity, and the new issues that are emerging with changes in economy, society, and the country's position in the world.

For this project, six areas of human security were chosen as the main focus, and papers commissioned from experts in the field. Those areas are

- economic security
- environmental security
- health security
- food security
- personal security
- political security

These areas are of course not discrete. There is a lot of overlap, and interconnection. But the six areas provided six starting points for an audit of human security in Thailand today, and an investigation of the emerging issues for tomorrow.

### What worries Thailand?

Besides these inputs, the team working on this project also travelled to four provinces in four regions of Thailand to listen to local officials and prominent members of civil society give their views on the present state of human security.

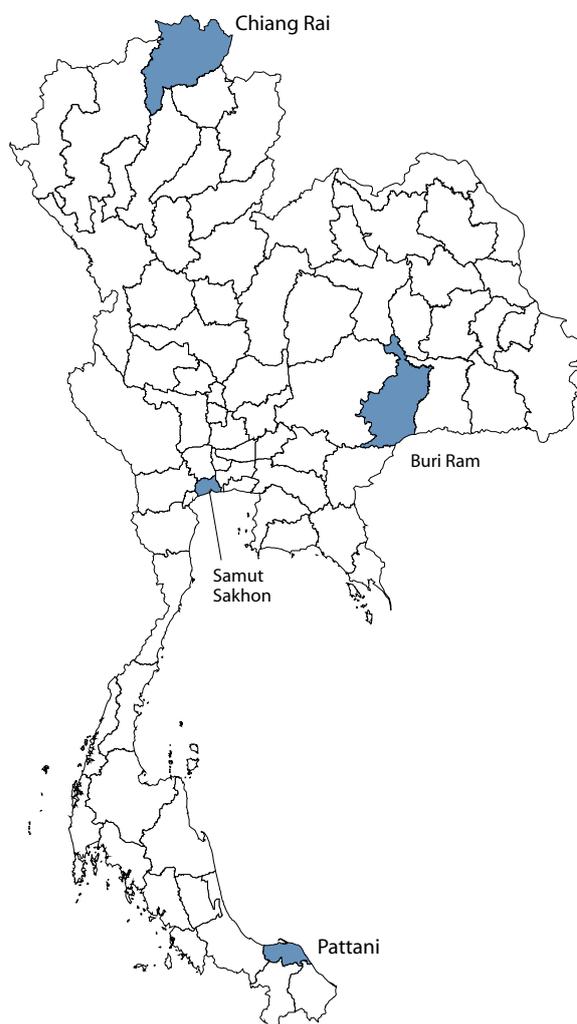
The four provinces (see Figure 1.2) chosen were not the major regional centres. They were also different from one another in social composition and exposure to problems. Pattani is in the far south, troubled by insurgency; Samut Sakhon is an industrial area with a large workforce of non-Thai migrants; Buri Ram is in the poor rural northeast; Chiang Rai is close to an area of environmental conflicts, and a border associated with drug trading and other problems.

Those invited to these discussions included local officials from departments and agencies engaged in social issues, and representatives of local civil society including village headmen, elected members of local government, social development volunteers, health volunteers, religious leaders, and representatives of the aged, disabled, and other groups. As prologue to the discussions, the invitees were asked to fill in a simple questionnaire about human security. Their responses were used to guide the topics of discussion.

The sample is small and not at all representative, but the results of this questionnaire survey give some indication of the subjects which are of current concern.

<sup>6</sup> According to UNDP estimates, Thailand's GDP per capita in 2006 in PPP (purchasing power parity) terms was US\$ 7,613. See [hdrstats.undp.org/2008/countries/country\\_fact\\_sheets/cty\\_fs\\_THA.html](http://hdrstats.undp.org/2008/countries/country_fact_sheets/cty_fs_THA.html), accessed 19 July 2009.

**Figure 1.2: Four provinces that discussed the present state of human security**



### Personal concerns

The first question asked discussants to rate how important certain issues were to them personally.<sup>7</sup> Many of the issues rated of high concern are related to health. People are concerned about becoming sick, especially from bad food or exposure to pesticide. They are worried about traffic accidents. They also are moderately concerned about not being able to get good quality care. The only health issue on the questionnaire which did not get rated of high concern was the affordability of health care – reflecting the success of the universal health care system introduced over the past decade.

The three other concerns in the top bracket are drought, drugs, and having enough money in old age. These discussants show low concern on all the

economic issues, but that probably reflects their own relatively secure economic status. The ranking of these concerns was broadly consistent across the four regions with one exception: in Pattani, located in an area wracked by insurgency, the discussants rated the possibility of non-military armed groups' attack as their single highest concern, but elsewhere this topic was not an issue.

**Table 1.1 Personal concerns**

High concern
Being involved in a traffic accident
Becoming sick from bad food
Becoming sick from pesticide
Becoming seriously ill
Suffering from drought
Not having enough money in old age
Not being able to get good quality health care
Children or friends becoming addicted to drugs
Medium concern
Being robbed
Being victim of an insurgency attack
Not having people to help in old age
Suffering loss of income
Suffering from floods
Not being able to afford high cost of health care
Being asked for a bribe by police
Low concern
Being subject to violence at home
Becoming unemployed
Being asked for a bribe by officials
Losing savings in bank collapse
Have to move house for economic reason

### Social concerns

A second question asked the discussants to rate how important several general issues were to the population as a whole. The scores here were noticeably higher than on the first question. The discussants showed higher concern about a larger range of issues.

Among the six areas of human security covered in this report, the discussants' highest concern is about political security. They are worried about corruption among politicians, corruption among officials, and political disorder. The responsiveness of government also rated as of medium concern.

The second major area of concern is environmental security. The decline of the environment and loss of forests rate of high concern, while contamination of air, food and water, as well as environmental conflicts, rate of medium concern.

<sup>7</sup> The total number of respondents in the four sessions was 120. The grouping into high, medium, and low concern in Tables 1.1 and 1.2 is arbitrary, and given the small sample size, the ranking of issues within each group is not significant.

**Table 1.2 Social concerns**

High concern
Corruption among politicians
Human trafficking
Decline of environment
More immigrants coming to Thailand
Loss of forest
Corruption among officials
Political disorder
Poor quality of education
High cost of fuel
Medium concern
Foreigners buying land
Contaminated food
Growing indebtedness
Conflicts over the environment
Air pollution
Government not responsive to people
Contaminated water
Thailand not competitive in the world
Low concern
Wide gap between rich and poor
Ageing society
Hazardous wastes
Wide gap between city and village
High cost of rice
Contracting bird flu
Noise pollution
Victimization by the police

On this question, there was more variation among the regions, reflecting their local differences. In the region with high urbanization and industrialization, hazardous waste is also rated as a high concern, and the various forms of pollution attract higher concern than elsewhere.

Next, the discussants are concerned about two major topics of personal security – the inflow of migrants, and human trafficking. In the one province with a large number of migrants working in local industries, the issue of migrants was rated of highest concern by a wide margin.

Again, economic issues are generally of lower concern but with some important exceptions. The high cost of fuel is troubling. Even though these discussions were held at a time when oil prices had fallen dramatically, the peak levels in 2008 were still in the memory. Also of high concern is the poor quality of education, while growing indebtedness ranks of medium concern.

In sum, these discussants have high personal concern over several issues of health security. Thinking about

the society as a whole, they rate issues of political security and environmental security of high concern. They are also worried about drought, drugs, debt education and ageing.

Quotations from these sessions are displayed throughout this report. These need to be read with a proper perspective. We make no claim that these views are representative, although we have selected excerpts which reflect the views expressed at these particular sessions. The invitees were asked to talk about their insecurities and their concerns so these quotations are not in any way a balanced view.

## This report

This report begins with an audit of the current state of human security in Thailand across the six areas noted above. This audit finds that the country has overcome many of the most fundamental problems in human security that beset the country a generation ago. Poverty has been sharply reduced. Access to water is more complete. Major infectious diseases are less of a threat. Economic security has greatly improved. There are still certain groups that are at risk, and several individual issues which should be priorities for concern. In most cases the remaining problems are over implementation.

This survey also identifies five issues which are emerging or growing in importance because of the major changes in Thailand's society, economy, and position in the world over recent decades. We argue that these five major issues, along with climate change, will have major importance for human security in the immediate future, and that they need greater prominence on the national agenda. These issues are covered in Chapter 3. Given the scale and complexity of these issues, this report does not recommend solutions, but rather makes suggestions about processes that Thailand might pursue in order to find those solutions with the participation of government agencies, civil society, and international partners.

The final chapter offers a short list of the key challenges for improving human security in Thailand in the near future.

## 2. Human security today: An audit

The single most striking impression from the provincial discussions conducted under this project was the participants' relatively low level of concern over their personal security, and their high level of anxieties about the society as a whole. These anxieties covered a wide range of areas – the family, community, environment, pollution, migration, and politics. People are sensitive to the disparities in the society and the disagreements they provoke. These disparities are about economic standing, political access, gender, rights, and access to resources.

In Samut Sakhon, several people expressed their insecurity at living with a community of labour migrants that has ballooned from nothing to 400,000 people in a handful of years. One participant imagined aloud that the migrants could one day take control of the government offices, police stations, and banks.

In Pattani, the participants had been living for six years with the violence that killed over 3,000 people. Constantly in the discussion, participants talked about injustice as the basis for insecurity, and the need for justice to achieve any solution.

In Chiang Rai, a border province with problems over drugs, HIV/AIDS, and human trafficking, a fierce debate arose over the family. Some complained that children had become uncontrollable because they now took their values and their models from the national media. Others countered that parents were to blame because of their own poor behaviour. One participant pointed out that the drug trade flourished because people admired the riches it generated.

In Buri Ram, where the discussion took place only days before the worst outbreak of political violence in the capital in over 30 years, discussants complained that politics were a problem at both national and local levels. They expressed their frustrations at the instability of national politics, the prevalence of corruption that “descended from above” into local government, and the way that national political divisions were dividing local communities.

Disparity, injustice, and the potential for violence are dominating concerns. In this chapter we review the state of human security in Thailand today against this background. One advantage of the human security framework is its wide range and integrated view. In this chapter, we approach it from the perspectives of economic security, food security, environmental security, health security, personal security, and political security. These are not discrete areas, just different starting points. The aim is to identify the key priorities for action to improve human security.

### ECONOMIC SECURITY

Economic security, at the minimum, is freedom from want. It is the opportunity and ability for people to earn regular income, with minimal impact from disruptions, in order to meet basic needs and develop the potential to improve their lives.

The cornerstone of economic security is remunerative work. To contribute to economic security, the remuneration should at least be able to cover basic needs and should not be subject to fluctuation. The nature of the work itself should be stable and free from hazards. The ability to obtain and perform remunerative work rests upon prior education and training as well as health and nutrition. Access to capital or financing is also a factor, particularly for the self-employed and owners of small businesses. Every worker also needs to look beyond employment, to economic security at times of personal crisis and after retirement.

Disruptions to income or work are unavoidable, such as in layoffs and disability. A person's ability to shield his satisfaction of basic needs from such disruptions depends on an ability to save, on access to credit, and on the availability of social support, whether from the family, community or state.

Hence, economic security rests upon an adequate flow of income and stability in employment, both of which are determined by national economic conditions, and the government's macro-economic and distributional policies.

## Thailand's economic record

*Thailand has enjoyed a long period of strong growth, but the development pattern has left the economy highly exposed to the outside world, and has placed a large proportion of the workforce in the informal sector.*

Over the past fifty years, the Thai economy grew at an average of over 7 percent per year, one of the most successful examples of sustained growth in the world. The proportion of the population in poverty fell from almost half to single-digit level, but some pockets of structural poverty remain. A high proportion of the workforce is in informal employment and hence exposed to various risks. As the economy has become highly integrated with the outside world, and hence vulnerable to international fluctuations, regional or global crises have major implications for human security. In the longer term, there are issues over Thailand's ability to achieve further growth and reforms which will advance economic security.

### A very open economy

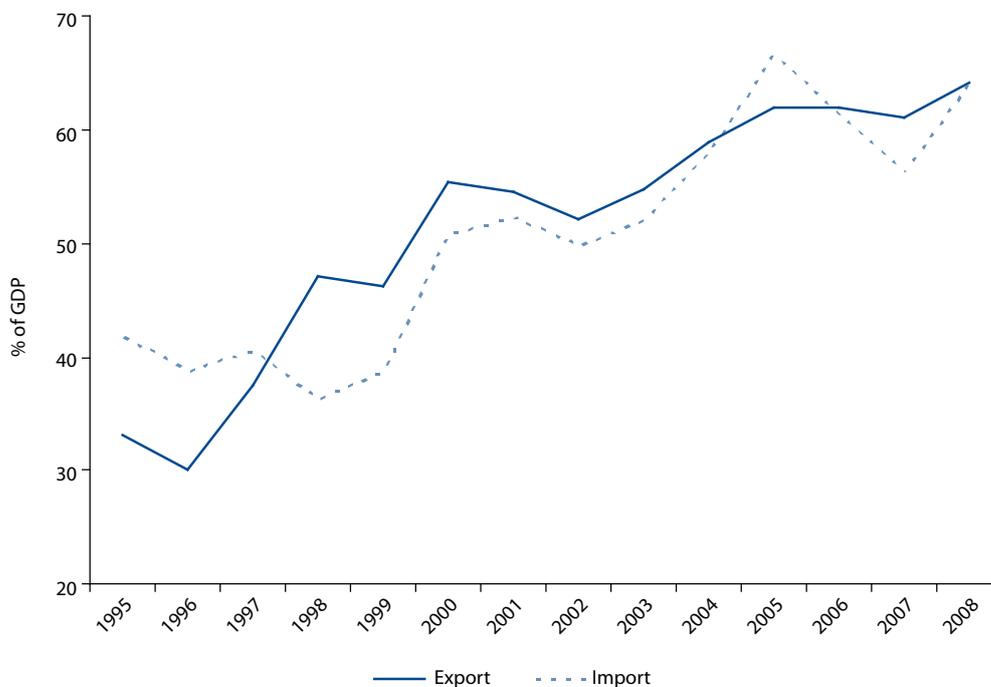
Over the past half-century, Thailand's overwhelmingly agricultural economy has been transformed by the

development of industrial and service sectors, both of which are highly integrated with the outside world. Thailand is a host to many multinational manufacturing firms, and its domestic firms participate in global production chains. Annual tourist arrivals have increased to over 14 million in 2007, and the sector contributes around 6 to 8 percent of GDP.<sup>8</sup>

This external orientation has contributed to rapid growth, but also introduced new forms of instability and human risk. In 1997, Thailand led the way into the Asian financial crisis owing to its failure to manage international financial flows. Besides the immediate distress, that experience had both positive and negative consequences for future vulnerability.

Taking their inspiration from HM King Bhumibol Adulyadej's Sufficiency Economy, Thai policymakers after 1997 placed a priority on immunizing the national economy against external shocks. The three key principles of the Sufficiency Economy are: "moderation; wisdom or insight; and the need for built-in resilience against the risks which arise from internal or external change." Following this guide, government agencies resolved to increase national reserves, reduce foreign debt, introduce inflation

**Figure 2.1 Trade as percent of GDP, 1995-2008**



Source: Bank of Thailand databank

<sup>8</sup> Office of Tourism Development, [www.tourism.go.th](http://www.tourism.go.th), accessed 18 December 2008. (The World Travel and Tourism Council estimates that the direct plus indirect contribution of tourism to GDP was 14.1 percent in 2007, [www.wttc.org](http://www.wttc.org), accessed 7 January 2009).

targeting, impose strict limits on government debt and fiscal balance, and institute a national risk management scheme.<sup>9</sup> Both five-year plans compiled after the crisis took the Sufficiency Economy as their guide. One major objective of the Tenth Plan (2007–11) was “reforming the structure of the economy to be competitive and self-immunized in the face of risks and fluctuations in the environment of the age of globalization.”<sup>10</sup>

At the same time, the banking sector was obliged to adopt international standards for accounting, risk management, and loan classification and provisioning, leading to greater prudence in lending, which in turn pressured the banks’ clients to be more disciplined and transparent in their financial reporting and management.

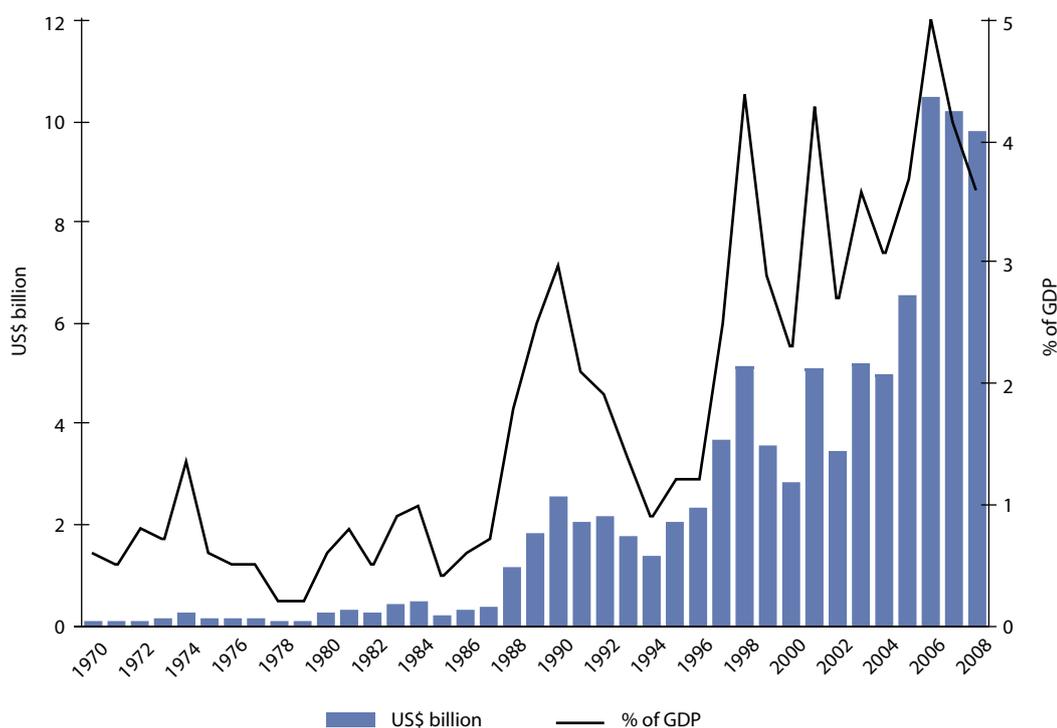
On the other side, the country’s external exposure increased still further in the crisis and its aftermath. Recovery was largely achieved by increasing exports and attracting more tourists owing to a cheap

currency. In addition, Thailand signed free trade agreements with ASEAN, New Zealand, Australia, India, and China, and lowered tariffs, bringing the average rate of protection down from 17 percent in 1999 to 11.5 percent in 2005.<sup>11</sup> The ratio of exports to GDP rose to 64 percent by 2008, a very high level for an economy of Thailand’s size (see Figure 2.1).

Dependence on foreign direct investment also increased, rising to around 3–5 percent of GDP, over triple the level prior to the crisis (see Figure 2.2). Many domestic firms were converted to foreign ownership, and many new multinationals entered.<sup>12</sup>

This external orientation ensured a rapid recovery. Average income, consumption, and poverty levels recovered from the crisis shock by the early 2000s, and employment returned to normal levels soon after. But the consequence of this recovery strategy has been increased risks in the face of global economic disorder.

**Figure 2.2 Foreign direct investment, 1970–2008**



Source: Bank of Thailand, databank

<sup>9</sup> See UNDP, *Thailand Human Development Report 2007: Sufficiency Economy and Human Development*, especially pp. 29–31, 59–62.

<sup>10</sup> NESDB, *Summary: The Tenth National Economic and Social Development Plan (2007–2011)* (T).

<sup>11</sup> Narongchai Akrasenee, “Ten Years After the Crisis: Reform and Readiness for Sustainable Development,” paper presented at the TDRI Annual Conference, Pattaya, 2006 (T).

<sup>12</sup> Pasuk Phongpaichit and Chris Baker, eds., *Thai Capital after the 1997 Crisis*, Chiang Mai: Silkworm Books, 2008.

## A very informal workforce

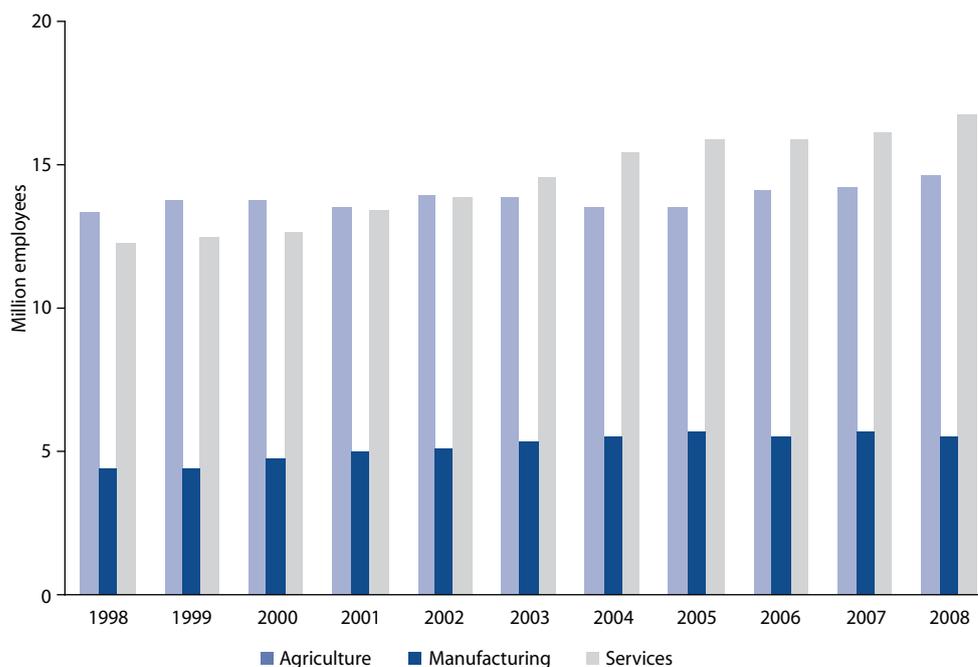
Thailand's pattern of externally oriented growth has resulted in a distinctive pattern of employment. As a result of urbanization and industrialization, employment in agriculture has fallen from around 70 percent of total labour force in 1980, but not as far as in many countries of a similar size and income level. In the late 2000s, agriculture is still the main employment of two-fifths of the population. Moreover since the 1997 crisis, the transfer away from agriculture has slowed markedly, with numbers working in agriculture static, and only net additions to the workforce swelling non-agricultural employment (see Figure 2.3).

Many factors have contributed to this pattern. Thailand is blessed with good natural resources for

agriculture. Industrial investment by multinationals has tended to be more capital-intensive and less labour-intensive than local conditions would warrant. Education in the past did not equip many to move out of agriculture.

For similar reasons, as much as 58.3 percent of the employed are working in the informal sector, including most of those in agriculture, but also two-fifths of those outside agriculture (see Figure 2.4).<sup>13</sup> Informal workers are especially concentrated in the sectors of transport, trade, and construction, but also account for 22.1 percent in manufacturing (see Figure 2.5). Many are probably confined to the informal sector due to lack of education, as those with no higher than primary education account for 71.6 percent of those employed in the informal sector but only 36.5 percent in the formal sector.

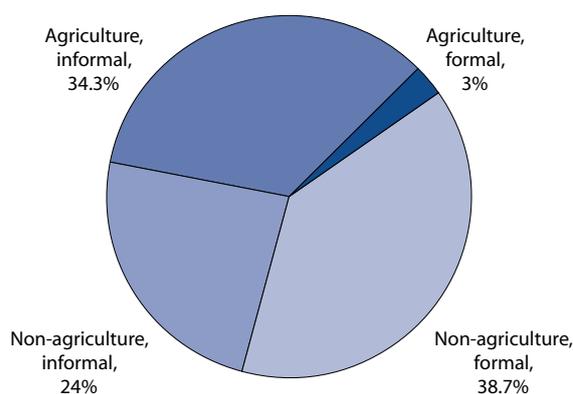
**Figure 2.3 Employment by sector, 1998-2008**



Source: NSO, *Labour Force Survey*, annual average figures

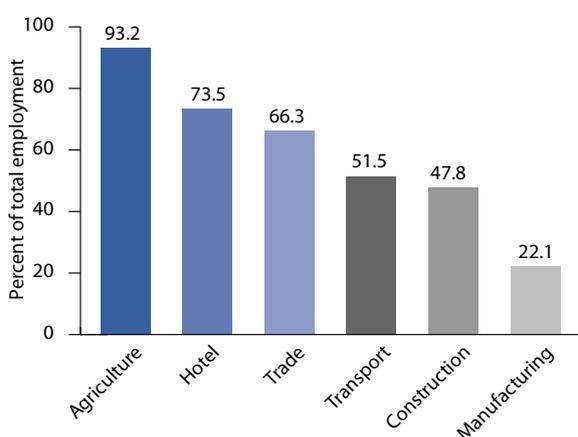
<sup>13</sup> NSO, *Survey on Informal Workers 2007*, (T).

**Figure 2.4 Labour force, formal and informal, 2007**



Source: NSO, *Survey on Informal Workers 2007*

**Figure 2.5 Informal employment by sector, 2007**

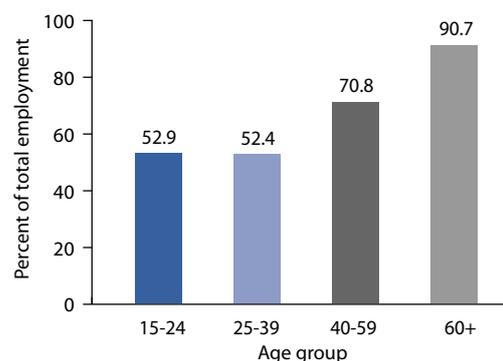


Source: NSO, *Survey on Informal Workers 2007*

The formal and informal sectors are linked by flows of money and people. Rural households are subsidized by remittances from household members working outside, mainly in the urban areas. For the rural population in total, this subsidy is around 9 percent of total income.<sup>14</sup> Many young people leave the rural areas to work in the urban areas. Those who work in modern manufacturing may not stay beyond age 40 because employers favour younger staff. As a result, the proportion of people employed in the formal sector falls off rapidly after age 40. Some may eventually return to the rural area for retirement. Those above age 60 who are still in employment are overwhelmingly in the informal sector, mostly agriculture (see Figure 2.6).

In addition, the rural household economy still serves as a cushion against temporary unemployment and other shocks. During the 1997 crisis, around 2 million people flowed back from city to village, although only briefly.<sup>15</sup>

**Figure 2.6 Informal employment by age group, 2007**



Source: NSO, *Survey on Informal Workers 2007*

These flows result in a labour market which is highly flexible. But the prevalence of informal employment means that a large number of people are vulnerable to economic insecurity. Informal workers are outside the protection of labour laws, excluded from social security, largely deprived of opportunities for training, and often receive “unfair” wages.

The flows of money and people also mean that these risks are shared and spread through the system. An urban shock is rapidly communicated to the rural economy through falling remittance and return migration flow.

### Unemployment and poverty

*The risk of falling into poverty has reduced a lot, but stubborn pockets remain.*

Prior to the 1997 crisis, the unemployment rate shown in NSO Labour Force Surveys hovered around 1.5 percent, or around half a million people. After the 1997 crisis, this figure tripled and then shrank rather slowly back to the old level by 2006. But in an economy where almost three-fifths of people work in the informal sector, such unemployment rates underestimate the real problem. Many people without recourse to social security take up self-employment such as vending or work in part-time and casual jobs in order to survive. Income and poverty measures are thus a better measure of economic insecurity.

People are still at risk of poverty. Although poverty has fallen from 21 to 8.5 percent between 2000 and 2007, there are still over five million below the poverty line (see Table 2.1 and Figure 2.7). Up till now, economic growth has been the major contributor to poverty reduction. Possibly from now on that will be less effective as the remaining pockets of poverty are structural.

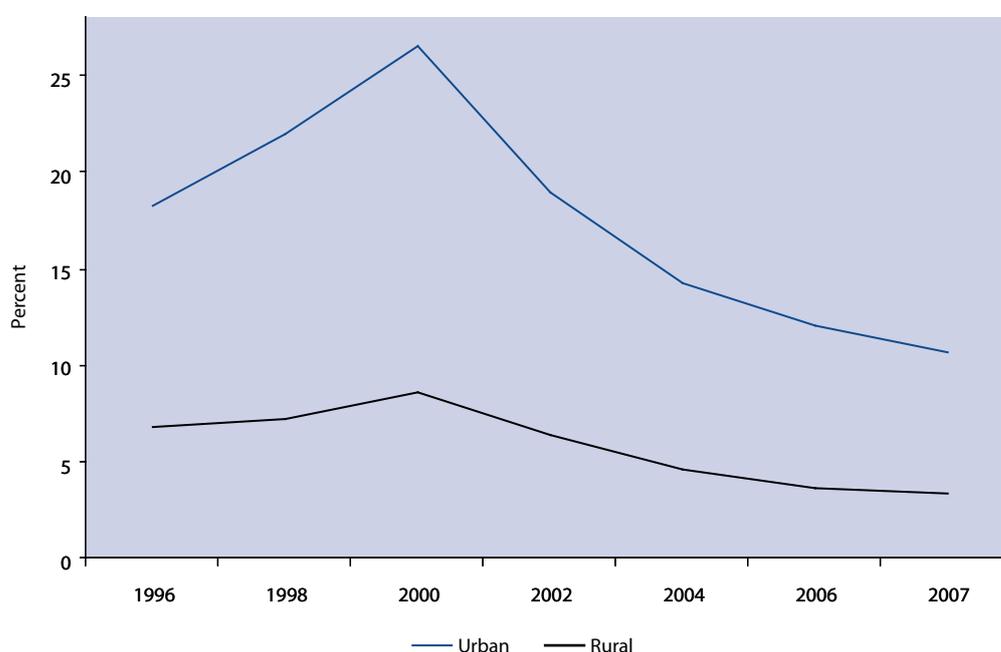
<sup>14</sup> NSO, *Household Socioeconomic Survey, 2007 (T)*.

<sup>15</sup> Pasuk Phongpaichit and Chris Baker, *Thailand's Crisis*, Chiang Mai: Silkwork Books, 2000, pp. 92-3.

**Table 2.1 Poverty incidence, 1988–2007**

	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006	2007
Total population (million)	52.4	54.5	55.6	56.6	57.6	58.7	59.9	61.2	62.9	63.4	63.9
Below poverty line (million)	22.1	18.4	15.8	10.7	8.5	10.2	12.6	9.1	7.0	6.1	5.4
(percent)	42.2	33.7	28.4	19.0	14.8	17.5	21.0	14.9	11.2	9.6	8.5
Poverty line (Baht/person/month)	633	692	790	838	953	1,130	1,135	1,190	1,242	1,386	1,443

Note: Data from NSO *Household Socioeconomic Survey*. Calculations by NESDB.

**Figure 2.7 Poverty incidence, 1996–2007**

Source: Calculated by NESDB from NSO, *Household Socio-economic Survey*, various years

### Rural poverty

In the rural area, 1-in-10 households are still poor. The household characteristics of the poor are now rather well known and have been constant for some time. The poor are most likely to be in the Northeast, Upper North, or Far South. Their families are large, with over five members (as against a rural average of 3.9). The household head is older and less well educated than the average. The household has little or no land. The family has a high dependency ratio, with large numbers of both children and old people compared to the average.<sup>16</sup>

Land is critical. Many of the remaining poor are landless labourers whose income is right at the bottom of the scale. Others are smallholders. Out of 5.8 million households with agricultural land in 2003, 1.4 million own less than 5 rai (0.8 hectare).<sup>17</sup>

Due to the lack of land, they rely heavily on other sources of income, including an average of 28 percent as income-in-kind, and 16 percent as transfers, usually from family members (see Table 2.2).

<sup>16</sup> NESDB, *Poverty Assessment 2007, 2008* (T).

<sup>17</sup> ONEP, *Strategy for Land Management: Planning of Land Holding, Land Development and Conservation, and Reservation of Public Land*, 2008 (T).

**Table 2.2 Poor households' sources of income, 2005-6**

Source of household income	% of average income of poor households	
	Municipal	Non-municipal
Salary and wage	41.7	19.6
Net business profit	16.3	7.57
Net farm profit	10.8	25.7
Cash transfer from outside the family	10.7	15.8
In-kind food	7.7	15.8
In-kind rent	10.4	12.5
In-kind commodity and services	2.0	2.8
Others	0.5	0.3
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

Source: NESDB, *Poverty Assessment Report 2007, 2008* using data from NSO, *Household Socio-Economic Survey 2005-6*.

### Urban poverty

In the headcount, the urban poor are now rather few, numbering 635,000 in 2007. But this number has reduced rather slowly over recent years. Using different criteria for definition, a 2006 survey of poor communities in the capital and thirteen other cities estimated the urban poor as 1.3 million.<sup>18</sup> The majority were migrants, had no higher than primary education, and worked in informal or casual occupations – daily or piece work, motorcycle drivers, vending – with 58 percent earning less than the minimum wage. Although the absolute numbers now counted in urban poverty are quite small, there are far larger numbers who suffer intermittent periods of poverty owing to insecurities of employment and income.

One of the main problems of the urban poor is housing security. Some 39.5 percent own a dwelling. Probably many of these people belong to long-settled communities. But migrants face difficulties due to the high price of urban land and the limited public provision of low-cost housing. Many slum communities are encroachments on public or private land, and often face eviction. Other migrants rent cheap, often shared accommodation of poor quality, and may be only marginally more secure.<sup>19</sup>

The urban poor rely heavily on credit to get by. In 2006, 52.4 percent were indebted. The single largest reason (45.3 percent) was for consumption, but many had borrowed to acquire a vehicle, fund a business, or pay for education. Debts are unavoidable. When members of the poor urban communities were asked

what assistance they needed, the three top responses were working credit, low-interest loans, and funding for education.<sup>20</sup> Poorer families, both urban and rural, have higher incidence of debt, averaging seven months of disposable income.

### Providing economic and social security

*Broadening the social security system has reduced risks for those in the formal sector, but the informal sector is still at risk.*

Over the past decade, government has taken a two-pronged approach to increasing economic security. First, it has lowered the cost of services such as health and education. Second, it has widened the social security system. However, the latter is limited to those in formal employment and thus excludes the majority, including the most vulnerable.

### Health

The Universal Health Care (UHC) system was rolled out in 2001–2002. By 2007, 63.2 million out of the total population of 66 million had some form of coverage. Around 8 million were covered as employees contributing to the Social Security Fund, 6 million as government, state enterprise employees or retirees or family members, 1.4 million under company schemes, 0.6 million under other schemes. The remaining 48.4 million were issued with cards entitling them to health care for a fee of 30 baht per visit.<sup>21</sup> This fee was eliminated in 2007.

Although free health care had been available to the poor earlier, the schemes reached only around 60 percent of the target group. Within three years of the nationwide introduction of the UHC, health

<sup>18</sup> NESDB, *Poverty Assessment Report 2007, 2008* (T).

<sup>19</sup> NSO, *Survey on Characteristics of Population and Society in Poor Communities in Bangkok Metropolis, Bangkok Vicinity, Central Region, Northern Region, Northeastern Region, Southern Region, 2006* (T).

<sup>20</sup> *Ibid.*

<sup>21</sup> Data from NSO, *Health and Welfare Survey 2007* (T).

care spending as a proportion of household income fell from 2.15 to 1.84 percent. The government now shoulders 64 percent of all health spending, up from 47 percent in 1995. According to TDRI, this one scheme enabled a million people to rise above the poverty line. The scheme is heavily used and extremely popular. Of 3.5 million hospital visits covered by some form of insurance in 2006, over 70 percent fell under the UHC scheme.<sup>22</sup>

## Education

Government has also made education more accessible by regularly extending the compulsory period, and by cutting the tuition cost to zero. However, this has only been partially successful.

More children stay at school longer, but there are still high drop-out rates from elementary to lower secondary, and from lower to upper secondary (see Figure 2.8). Especially for poor families, schooling remains expensive because of the cost of uniforms, travel, equipment, meals, and informal fees demanded by some schools. Besides, children are sometimes withdrawn from school in order to work and contribute to the household income. More recently, government has attempted to counter these difficulties. In 2009, government undertook to provide 15 years of free education (pre-school

to upper secondary), and to subsidize the costs of textbooks, uniforms, equipment, and school milk.

The levying of informal fees was banned. While this is undoubtedly a move in the right direction, it does not address all the costs of schooling, including the foregone income from the child's labour.

These advances in the access to education are vital, but there is another critical issue over the quality of education. It is widely accepted that the quality of many schools is below standard. Average test scores have been very low.<sup>23</sup> The NESDB assessed that 60 percent of all teachers underperform.<sup>24</sup> The quality of schools is lower in rural areas, especially the poorer rural areas.

An attempt at reform, launched a decade ago, has not borne much fruit. The World Bank points out that Thailand spends 1.13 percent of GDP on secondary education compared to an average 1.86 percent for lower middle-income countries.<sup>25</sup>

## Social security

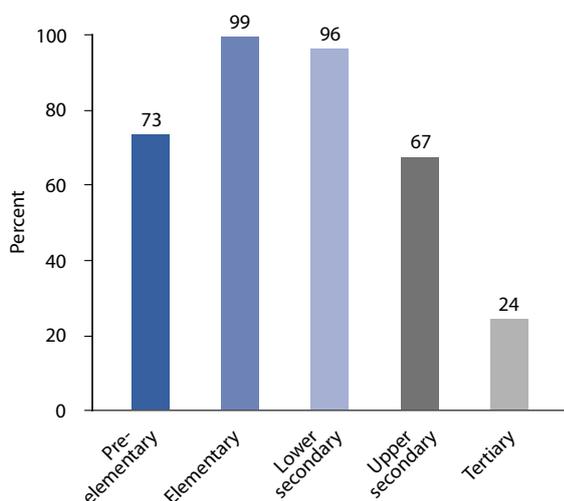
Government established a contributory social security system in 1971, and gradually extended it to cover all establishments with at least one worker. Employees, employers, and government each make contributions based on a percentage of the employee's income. The benefits include sickness, disability, maternity and death benefits, allowances for two children, a pension, and unemployment benefit (see Box 2.1). Sickness and injury at work are covered by a separate Workers' Compensation Fund, to which only employers contribute. By 2008, 9.3 million people were covered by the social security scheme and another 1.4 million by similar arrangements for government servants.<sup>26</sup>

However that leaves about two-thirds of the workforce without cover. Most are in agriculture and or the urban informal sector, and are arguably most in need of social security.

## Other schemes

Other schemes have been used fitfully to help these groups. Rising crop prices have a direct effect on the incomes of farmers. From time to time government has allowed farmers to pledge their crop with a bank after harvest so they will not be forced to sell at a low point in the price cycle and be exploited by middlemen. In the case of certain crops where the trade is well organized, particularly rubber, this has worked quite well. In many other cases, it has been a disaster. Funds leak. Pledged crops disappear from

**Figure 2.8 Education enrolment rates, 2007**



Source: Ministry of Education

<sup>22</sup> Viroj NaRanong, "Health Care in Thailand: The Road to Universal Coverage," paper presented to TDRI Annual Conference, Pattaya 2006, (T); Viroj NaRanong, "Human Capital and Health," paper presented to TDRI Annual Conference, Pattaya, 2008 (T); Ammar Siamwalla, "The Poor, the Rich and the 30 Baht Programme," TDRI Research Paper no. 34, June 2003 (T).

<sup>23</sup> See Office of the Permanent Secretary, Ministry of Education, *Educational Statistics in Brief 2008, 2009*, Table 24, p. 71 (T/E)

<sup>24</sup> NESDB, *Report on the Assessment of Progress under the Ninth Development Plan, 2002-2006* (T).

<sup>25</sup> Luis A. Benvenise, "The Social Monitor: Improving Secondary Education in Thailand," paper presented at the Thai Education Congress, Bangkok, October 2006.

<sup>26</sup> Data from Social Security Office website, [www.sso.go.th](http://www.sso.go.th), accessed 2 January 2009.

warehouses. Prices are set overly high, for political reasons, resulting in heavy losses to the government. Most of the beneficiaries of these schemes are politicians, traders and more well-off farmers. In 2009, a farmer's income insurance system was introduced to replace the mortgage system.

Since 2001, government has made available more funds for microcredit loans, however evaluation of these programmes shows that very little reaches the poor.<sup>27</sup> Government also provides other subsidies on commodities, particularly on cooking gas and occasionally on other fuels, but these are again poorly targeted. A World Bank study concluded that government subsidy schemes tend to aid the rich more than the poor.<sup>28</sup>

The government has launched the Sufficiency Economy Community Project in order to generate employment and improve social protection. Projects that are consistent with the Sufficiency Economy Philosophy are eligible for financial support.

### Managing external fluctuations and crises

*The openness of the Thai economy places all at risk in the face of a world economic crisis.*

Thailand's greater openness since the 1997 crisis means increased vulnerability to international fluctuations. For most of the 2000s, the major problem was high oil prices prompting inflation because of the country's heavy dependence on imported oil. Government reacted with some short-term subsidies while laying longer-term plans to shift towards other sources of energy.

The sub-prime crisis which broke in the US from late 2007 was ostensibly very different from the crisis of 1997. Thailand was in no way responsible for the crisis. Taking their inspiration from HM King Bhumibol Adulyadej's Sufficiency Economy, Thai policy-makers since 1997 had placed a priority on immunizing the national economy against external shocks. In 2007, Thailand's banks, reserves, and balances were all in good shape. Yet Thailand was not immune to the impact. The dramatic fall in world trade caused Thailand's exports and tourism to shrink sharply, and its GDP to follow suit.

As in other countries, the Thai government reacted with a Keynesian stimulus. In mid-2008, the government introduced price subsidies to boost incomes. In February 2009, government announced a 116,700 million baht package which extended many of those subsidies and added others. It

#### Box 2.1 Current social security benefits

*Sickness or Injuries:* medical treatment free of charge at the registered hospital and cash benefits due to sick leave.

*Maternity Benefit:* cash benefit and lump sum for delivery.

*Invalidity Benefit:* medical treatment and cash benefit.

*Death Benefit:* funeral grant and survivors allowance.

*Child Allowance:* monthly allowance paid for the first two children of the insured under 6 years old

*Old Age Benefit:* lump sum or pension

*Unemployment Benefit:* allowance of 50 percent of wages but not more than 7,500 baht for not more than 180 days (temporarily extended to 8 months in 2009 to mitigate the impact of the economic crisis) within one year.

followed up with a second package of 1.56 trillion baht mostly devoted to investments in water schemes and public infrastructure. In these packages, government consciously tried to balance help to the formal and informal sectors, to pay special attention to vulnerable groups, and to build future capacities as well as providing current relief.

These packages may have mitigated the crisis, but they could not prevent a large shrinkage in the economy. The boost to consumption demand by the Keynesian stimulus was puny in comparison to the loss of demand from exports. The employment and income effects of large-scale infrastructure spending come only after a long delay.

The lessons are clear. The modern world economy is prone to periodic crises. Thailand is vulnerable to these crises because of the high degree of exposure of its economy to the outside world. The high proportion of Thailand's workforce in the informal economy is especially vulnerable to such crises because they have limited social and economic security.

<sup>27</sup> NESDB, *Report on the Assessment of Progress under the Ninth Development Plan, 2002-2006*, Bangkok: NESDB, 2006 (T).

<sup>28</sup> Hyun Hwa Son, "Is Thailand's Fiscal System Pro-Poor? Looking from Income and Expenditure Components," paper presented at the second inequality and pro-poor growth spring conference on the theme of how important is horizontal inequality? World Bank, Washington DC, 9-10 June, 2003.

### Box 2.2 Community safety nets

Since the 1997 crisis, there has been increasing exploration of the concept of strengthening the safety net provided by the community, in contrast to past government programmes that were centrally formulated, directed and administered.

In 1997, there were approximately 500 community welfare funds all over the country. These included saving groups, community enterprises, religion-based community funds, and other organizations established to provide welfare for their members, and perhaps also for the community. Under the Social Investment Fund government agencies started to explore ways to strengthen these community welfare funds at the sub-district or district level. Funding from the government and local administrative units were allocated to supplement existing funds as well as to support the establishment of new ones

As of 2007, the Community Organizations Development Institute (CODI) reported that there were community welfare funds in 656 sub-districts, 64 provinces, servicing approximately 1 million villagers in 5,540 villages. Total capital reached 198.2 million baht, 88.93% was from the communities' contribution, 7.61% from CODI, and 3.46% from local administrative organization. Most of these funds were savings funds, dedicated to building up savings and investments within the community. Several also undertook other welfare activities such as social services for the elderly, and natural resource management by the community. Communities are thus encouraged to save and pool their resources to address local challenges.<sup>29</sup>

In recent years, government agencies and academics have studied various approaches to strengthen and leverage among various types of community saving and welfare funds in an endeavour to expand the social security system to informal workers.

It is vital that, in confronting these periodic crises, the objectives of human development are not compromised in any way. To minimize the impact on human security resulting from global crises, counter-crisis programmes should observe certain key principles.

#### Key issues for managing global economic crises

- The policies, pursued since the 1997 crisis under the inspiration of HM the King's Sufficiency Economy, to immunize the national economy against external shocks by careful macro management, should continue to have a high priority.
- There should not be any reduction in social expenditures, and no cutback on existing plans for social projects such as the extension of compulsory education, subsidies for education costs and extensions of social security.
- Special attention needs to be paid to employment. For the large proportion of the population in the informal sector, there is no effective safety net if they become unemployed, except their own personal and family resources. The tourism and construction sectors are especially important because they have high levels of labour absorption, including a high proportion of informal-sector workers.
- People will have better chances of employment if they have the right skills. There are still shortages of skilled labour, especially with language and IT skills. Retraining schemes should have a prominent role. To be effective, such schemes need to be designed to suit the needs of particular localities, through cooperation of employers and other relevant parties.
- In practice, many people laid off in a crisis must create their own livelihood. In past experiences, small-scale entrepreneurs are highly inventive. What they always lack is credit. Microcredit schemes should play a role in any crisis-management strategy.
- Civil society can contribute. In the 1997 crisis, the Social Investment Fund (SIF) mobilized the energy of civil society groups and local communities to combat the social impact of the crisis (see Box 2.2). There are evaluation reports to indicate which parts of the scheme are worth repeating.

<sup>29</sup> Community Organizations Development Institute (Public Organization), *Annual Report 2007* (T)

### Conclusion: Vulnerabilities remain

Thailand's sustained growth over the past generation has made most people more secure more of the time. But the pattern of that economic growth has increased risks, especially for the large proportion of the population dependent on the informal economy.

Headcount poverty has declined significantly, but pockets remain. In the rural areas, 1-in-10 are still in poverty. Some simply have insufficient land. Others face structural difficulties, and fall outside any form of safety net.

In the urban areas, many people still face intermittent poverty due to insecurities of income and unemployment.

The social security net has expanded steadily over the past generation. The recent introduction of a universal health care scheme has significantly increased economic security. However, the large proportion of the population in the informal economy remains unprotected from other risks.

In the face of periodic worldwide economic crises that may be prolonged, government must concentrate its efforts on stimulating employment and self-employment.

For the longer term, government must address the two major sources of economic insecurity, namely the high external dependence and the high proportion of people employed in the informal sector.

While poverty has declined over the past generation, economic inequality has become worse. This major issue is considered in Chapter 3.

#### Key issues for improving economic security

- Targeted programmes are needed to combat remaining pockets of structural poverty.
- A concerted programme is needed to address landlessness in the poorer rural areas.
- More needs to be done to ensure housing security for the urban poor.
- More needs to be done to improve access to credit for the poor, especially in urban areas.
- Social security schemes must be extended to include workers in the informal economy.
- Schemes other than price support are needed to support the agricultural sector.
- Government programmes to combat global economic crises should give priority to issues of economic security, especially employment.

## FOOD SECURITY

Food security, in the definition drafted for the World Food Summit in 1996 and adopted by over 180 countries, is a situation “when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”<sup>30</sup> Food security has four components: availability, access, utilization, and stability. For a country to be food secure, there must be enough food available; everybody must have the resources and entitlements to gain access to a nutritious diet; the utilization of food should be healthy and risk-free; and there should be stability in the supply, and immunity against shocks and disasters.

Thailand is a major producer of food. For over a century, it has been one of the world’s major exporters of the important staple, rice. Over recent decades, its food exports have diversified to include starch products, oils, fish and seafood, fruit and vegetables. In the early 2000s, the government further stressed the importance of food production, marked by an aspiration to become the “Kitchen of the World.” Yet, there remains some concerns for food security.

In terms of availability, food has not been a problem until now. However, as the country has become more urbanized and more integrated with the outside world, new areas of risk have emerged.

### Availability

*Although Thailand has plenty of food, it might not be spared from food security problems.*

In the recent past, availability of food has not been an issue. Thailand produces more than enough food for its own consumption, and is one of the world’s largest exporters of rice and of several other food products.

For a long time, production of rice expanded by increasing the cultivated area. Over the past decade, however, this strategy is no longer available because of competition for other uses of land, and because of national policy to preserve or expand remaining areas of forest. But Thailand’s average rice yield is very low – around half that of neighbouring

Viet Nam. Over the past decade, yield has increased on a trend of 75 additional kilograms per hectare per year (see Figure 2.9). The country consumes only a little over half of its production, and exports the rest.

Similarly Thailand consumes less than a third of its sugar production, only a seventh of its pineapples, and fractions of many other items. Exports of food in 2006-7 earned 358 billion baht – one third by rice, and the remainder by cassava, sugar, fruit, vegetables, vegetable oils, milk products, oilseeds, and spices.

With growing openness to trade, Thailand now also imports growing volumes of food. After a free trade agreement was concluded with China in 2003, imports of fruit and vegetables increased rapidly to reach 6 billion baht by 2006.<sup>31</sup>

As a result, average nutrition levels are generally good. A 2003 survey found that daily energy consumption of adults (aged 15-59) ranged between 1,300 and 1,500 calories, that daily average protein intake was 54 grams, and that consumption of most protein sources (fish, chicken, pork, beef) was increasing.<sup>32</sup>

The risk concealed in this apparently benign situation of food availability was revealed in early 2008.

### Food and fuel

In three months in early 2008, the price of rice more than doubled (see Figure 2.10). This was, of course, a worldwide phenomenon, brought on by a convergence of natural and man-made factors.

This dramatic price spike emphasized that Thailand, despite its large domestic food surplus, was not exempt from increasingly wayward trends in world markets. Although the government did not restrict exports to protect local consumers (as some countries did), it had to activate crisis systems for ensuring vulnerable groups had access to the staple diet at reasonable prices. Most of all, the spike prompted public debate over the competition between food crops and fuel crops.

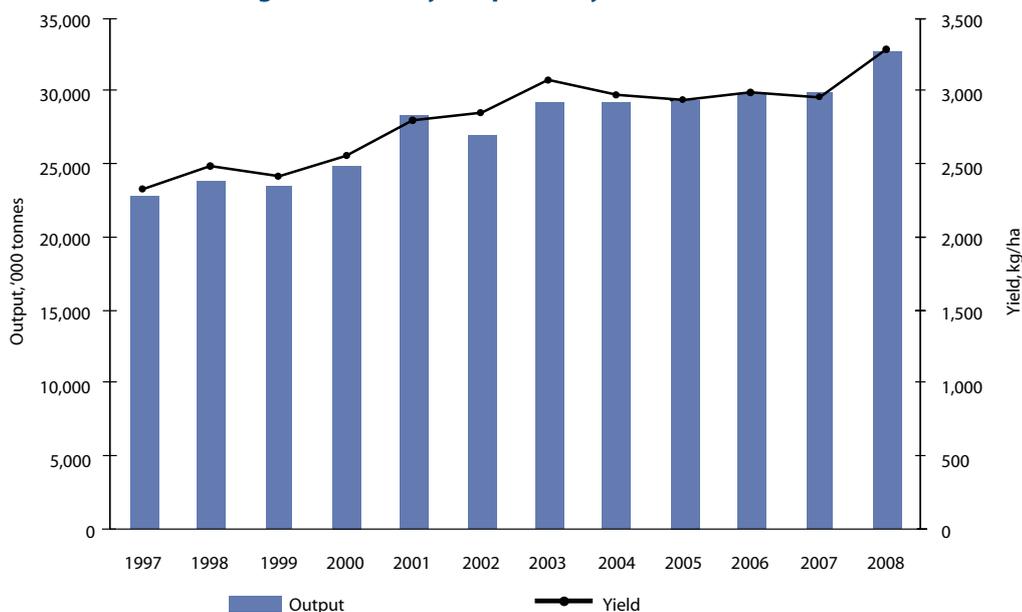
As oil prices rose through the early 2000s, so also did prices of crops for bio-fuels. Government also promoted ethanol-based fuels as a major plank of energy policy.

Between 2003 and 2007, the rate-of-return on growing rice fell by 45 percent, while that for tapioca and sugarcane grew over four times (see Figure 2.11).

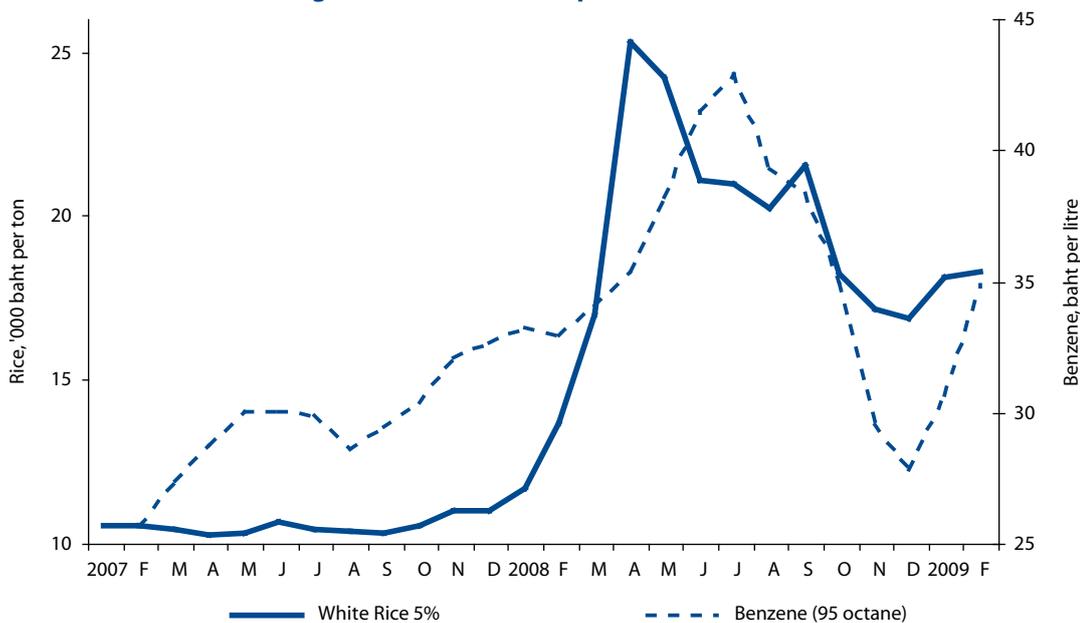
<sup>30</sup> FAO, “Food Security,” *Policy Brief*, June 2006, issue 2, [ftp://ftp.fao.org/es/ESA/policybriefs/pb\\_02.pdf](http://ftp.fao.org/es/ESA/policybriefs/pb_02.pdf), accessed 10 October 2008.

<sup>31</sup> Faculty of Economics, Kasetsart University. *Impacts of Thailand-China Free Trade Agreement (Under ASEAN-China Framework) and Adjustment in Fruit and Vegetable Agribusiness System, Final Report No. 1*. Report submitted to the Office of Knowledge Management and Development. 2008 (T).

<sup>32</sup> MOPH, *A Survey of Food and Nutrition of Thailand (5th Assessment 2003)*, Bangkok: Division of Nutrition, Department of Health, 2006 (T).

**Figure 2.9 Paddy, output and yield, 1997-2008**

Source: OAE, *Agricultural Statistics of Thailand*, various years

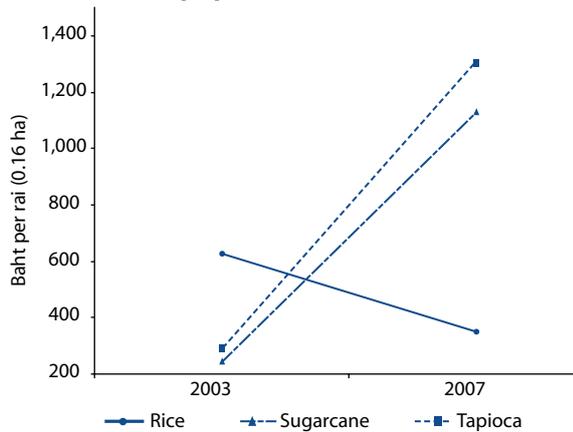
**Figure 2.10 Rice and oil prices, 2007-2009**

Source: OAE, *Agricultural Statistics of Thailand*, various years

Several agribusiness firms invested in ethanol production plants, and some acquired large tracts of land for plantation-style production. Some farmers also followed the price incentives by switching area into fuel crops. Although this has not had an effect of reducing the overall rice cultivation area and output, academics, policy makers and NGOs started to debate the linkages and possible trade-offs between food and fuel crops.

The surge in oil prices in 2007, worldwide panic over food prices in early 2008, brought realization that Thailand's agriculture faced both risk and opportunity. On the one hand, Thailand is lucky to have the capacity to produce both food and fuel crops, and the opportunity to benefit from rising demand and price levels. On the other hand, there is a possibility that price trends over the medium term will put Thailand's food security at risk, unless the situation is properly managed.

**Figure 2.11 Net rates of return of rice and fuel crops per rai, 2003 and 2007**



Source: OAE, *Agricultural Statistics of Thailand*, various years

On one hand, food and fuel crops are not really competitive because they grow on different types of land (wet and dry), and Thailand has the opportunity to meet rising demand for both by improving the existing low yields. On the other, food and fuel crops are competitive at the margin, and long-term price trends, plus the interests of powerful investment groups in the fuel industry, will ultimately threaten food production.

In the wake of the rice price hike, government set up several subcommittees which debated zoning areas for different types of crops. But NGOs argued that this approach would limit farmers' options and tend towards monocultures. Alternative proposals called for certain areas to be reserved for food cultivation, with management and decision-making decentralized to local communities

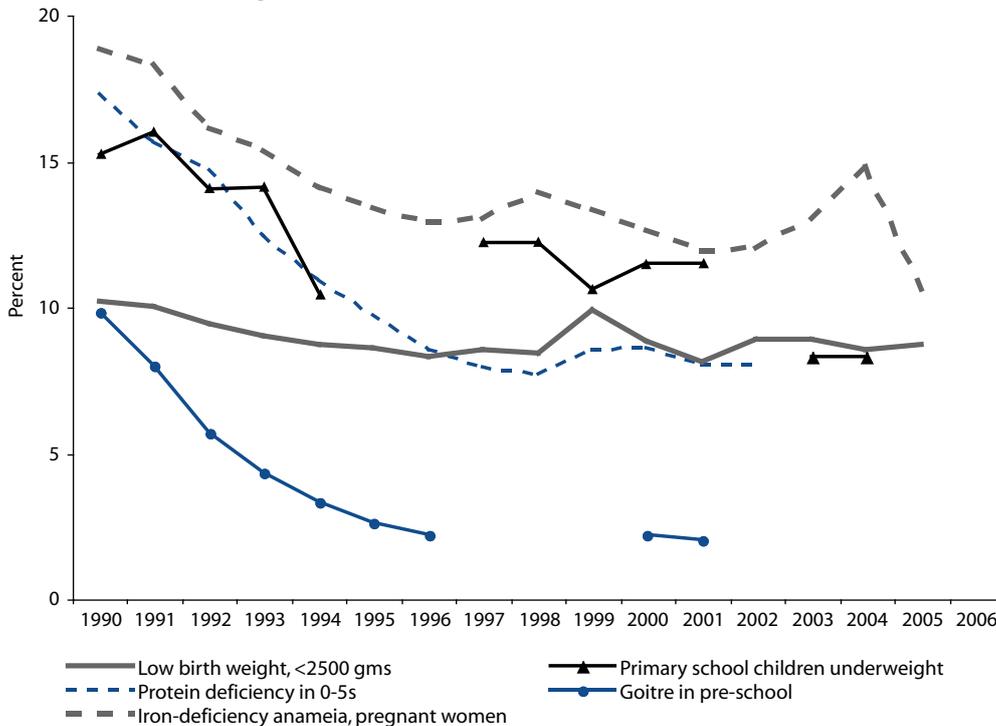
Perhaps the major risk lies in the fact that this debate was inconclusive. Both food and energy prices fell when the sub-prime crisis hit. Government's interest was deflected by political issues. Yet the long-term issue of food vs. fuel remains.

**Access**

*There are still groups that have insecure access to food, especially in the outer northeast, and in urban slums.*

Over the 1980s and 1990s, the health lobby succeeded in making food and nutrition an integral part of national planning. As a result of several campaigns, all the major indicators of nutritional deficiency fell sharply – severely underweight children from 2 percent in 1982 to insignificant levels by 1999, and mild or moderate underweight children from 48 to 9 percent over the same period. Between 1989 and

**Figure 2.12 Nutrition indicators, 1990-2006**



Source: MOPH, *Thailand Health Profile*, various years

2001, iron deficiency anaemia in pregnant women fell from 19 to 12 percent, and goitre in pre-school children from 12 to 2 percent.<sup>33</sup>

### Rural pockets

However, these impressive downward trends were halted in the 1997 economic crisis, and have proceeded much slower since (see Figure 2.12). In 1997, with the help of FAO, a Food Insecurity and Vulnerability Mapping System (FIVIMS) was installed to identify the regions and groups which remain at risk from malnutrition (see Figure 2.13).<sup>34</sup> The mapping revealed a stark regional pattern. The four provinces classified as most vulnerable with “significantly negative main food insecurity and nutrition outcomes” are all in the outer Northeast (Yasothon, Nong Bua Lam Phu, Nong Khai, Nakhon Phanom). The next most vulnerable category includes the rest of the Northeast and half of the Upper North. The third most vulnerable includes the rest of the Upper North. In short, nutritional deficiency is a regional problem (see Figure 2.13).

In these areas there are many households that have little or no land to own or work, or they depend on renting. They do not produce enough food for themselves, either because the land is inadequate or because they cultivate non-food crops. A 2003 survey of food and nutrition found that 17.9 percent of rural households spent over 80 percent of their total income on food.<sup>35</sup> They are thus vulnerable to price changes. Households with poor access to food also typically have a high dependency ratio, and a household head with a low level of education.

While the FIVIMS and other surveys do a good job of identifying those areas and groups that have poor access to food, little is known about how people cope with this risk. In the past, families and communities had sharing systems to protect the most vulnerable. In some areas, these still operate. A study in Nan province found that the poor could work on neighbours’ land in return for food, or gain support from kin, or access charity through the local temple.<sup>36</sup> But there is a strong impression that such coping systems have become less effective under the impact of social change.

Also in the past, the poor relied heavily on hunting and gathering for food, but this strategy is often no longer available owing to the decline of forest and common areas.

### Access problems in urban areas

In urban areas, the absolute numbers defined as in poverty on income criteria are now rather low. However, many face intermittent problems of access to food because of the overall insecurity of their life situation.

In 2003, according to the Community Organizations Development Institute, 8.25 million people were living in 5,500 low-income urban communities.<sup>37</sup> Most of them work in the informal sector, with a high proportion in casual employment. A sample survey of the urban poor found that 3 percent of households considered themselves food insecure and subject to severe hunger, and another 14 percent food insecure with moderate hunger. In all 10 percent reported that sometimes or often there was not enough food for the household, and most of them explained this was because of affordability.<sup>38</sup>

### Times of stress

Government’s main policy on food access at times of stress is to impose price control on many basic commodities including some foods, medicines, and cooking gas. Although food is generally available at all price ranges, the Ministry of Commerce attempts to mitigate impacts on the poor by making available discounted goods under the Blue Flag brand. Due to difficulties in targeting the poor, the Blue Flag products are available to all, but the distribution is rather limited. Lower-middle income households are likely to benefit most from the scheme. When prices were inflated by rising oil prices in the mid-2000s, the Ministry of Finance proposed instead to distribute coupons to low wage-earners, old people, and marginalized groups to ensure that they have access to essential goods. But the scheme faced difficulty in correctly identifying the deserving recipients, and was criticized as a populist ploy and a distortion of the market. Government abandoned the scheme and chose instead to subsidize public utilities.

<sup>33</sup> *Ibid.*

<sup>34</sup> MOAC, “FIVIMS in Thailand,” [www.fivims.org/index2pphp?option=com\\_content&do\\_pdf=1&id=45](http://www.fivims.org/index2pphp?option=com_content&do_pdf=1&id=45), accessed 14 October 2008.

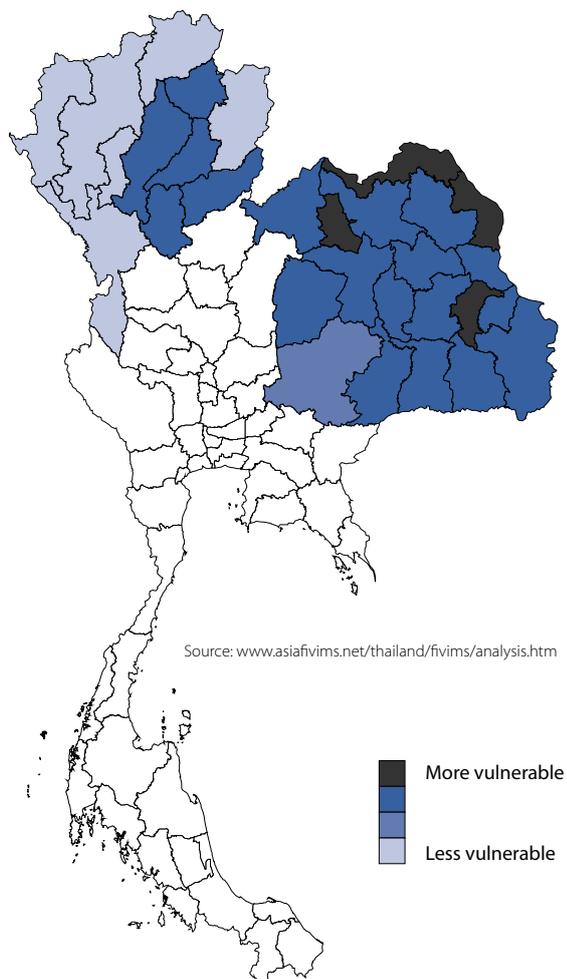
<sup>35</sup> MOPH, *A Survey on Food and Nutrition of Thailand (5th assessment 2003)*, Bangkok: Division of Nutrition, Department of Health, 2006 (T).

<sup>36</sup> Piyanart Imdee, “Food Security of Rural Community: A Case Study of Pa-Kha Village, Suak Subdistrict, Muang Nan District. Nan Province.” MA thesis, Thammasat University, 2004 (T).

<sup>37</sup> *Siam Thurakit*, 1 June 2005 (T).

<sup>38</sup> Noppawan Piaseu and Pamela Mitchell, “Household Food Insecurity among Urban Poor in Thailand,” *Journal of Nursing Scholarship*, Volume 36, Issue 2, 2004.

**Figure 2.13 Map of food insecurity and vulnerability**



## Utilization

*Growing numbers of people now feel insecure about what they eat because of risks of contamination.*

Over recent years, food safety has become a major public issue. Growing numbers of people worry about what they and their families are eating. These concerns are a result of changing consumption habits, shifts in supply, and failures in control.

## Contamination

A large and growing amount of food is prepared outside the home – consumed at a restaurant or stall, or bought ready-made from a supermarket or vendor. This trend is a result of both supply and demand. On the demand side, there are growing numbers of small households, single-parent families

### *Voices from the project discussions*

“When I buy food from the market, I worry about residues. Some of the stall-holders wash the vegetables right there in the market. Is it safe? And if I buy ready-made food from a vendor, how do I know she has washed the ingredients properly? In what kind of water?”

“The noodle sellers here wash the plates in the river. And they throw their waste in there too.”

and dual-working households who find it convenient to buy ready-made food. On the supply side, vending is an easy entry option for additional members of the workforce. A large number of the outlets are small restaurants or street-side stalls. For the latter, perched beside the traffic and remote from water supplies, maintaining hygiene is challenging. A 2005 survey by the Ministry of Public Health found contamination in 44 percent of its sample of ready-to-eat foods from stalls and supermarkets. Follow-up surveys found chronic contamination of coliforms, E.coli and TPC.<sup>39</sup>

Thai farmers use large quantities of chemicals that may leave residues in foods. Usage of chemical fertilizers has levelled off, but imports of pesticide increased from 73 to 102 thousand tons between 2003 and 2006. The Ministry of Public Health began surveillance checks on vegetable in the late 1990s. In 2005, 8.2% of samples in Bangkok tested by the Food and Drug Administration had pesticide residues above minimum safety level.<sup>40</sup>

Some foodstuffs are made by local manufacturers with little attention to safety. Scandals occur regularly. In 2008, a research project funded by Thailand Research Fund found that motor oil had been used in the production of rice noodles to make them softer and easier to cut.<sup>41</sup>

Food hazards is also a problem with imported food which has become widely accessible due to the FTAs Thailand concluded with several countries in the past six years. During 2004-2005, Department of Agriculture tested imported vegetables and fruits and found that 2.9% of the samples had pesticide residue beyond the minimum safety standard.<sup>42</sup>

<sup>39</sup> FDA, MOPH, “Comments to the Drafted Policy Proposals for the 1st Health Assembly”, Letter submitted to the President of the National Health Assembly Organizing Commission. 21 October 2008 (T).

<sup>40</sup> Health Information System Office, *Tonkit Newsletter*, December 2008, p.9, citing Food Safety Operation Center, MoPH (T)

<sup>41</sup> *Thai Post*, 29 August 2008 (T).

<sup>42</sup> Health Information System Office, *Tonkit Newsletter*, December 2008, p.9, citing Department of Agriculture (T)

In 2008, Thailand was among many countries that had imported Chinese milk powder contaminated with melamine.

In 2003, Thailand was one of the first countries to be affected by avian influenza. When rumours first surfaced, the government strongly denied there was any problem, and only reneged after a lone public health official went public.<sup>43</sup> Subsequently, the government confronted this outbreak and two subsequent outbreaks over 2004-5 with significant efficiency, destroying over 63 million birds, and imposing new standards on poultry producers.<sup>44</sup> At present, Thailand's expertise in handling the epidemic is internationally recognized and Thai experts have played an important role in the regional and global collaboration to prevent and control the epidemic.

### Food safety initiatives

The Ministry of Public Health launched a National Food Safety Program in 1999 to coordinate the work of different agencies overseeing food safety. Initially this effort focused on processing, distribution, and food handling. From 2001, the process of making health policy was significantly changed by introducing public participation through an annual Health Assembly. In 2004, this annual event focused on "Food and Agriculture for Health," and launched a slew of policies under the slogan "Safe Agriculture, Safe Food, Good Life," including the promotion of agricultural systems friendly to health and environment.<sup>45</sup>

In 2004, government launched a Food Safety Year, including Good Agricultural Practice (GAP), a scheme for labelling products which meet quality and safety standards.

Another development is organic agriculture. Since 2001, government started to promote organic farming. But in 2006, only 22,400 hectares of land was certified for organic production, and domestic sales were only 520 million baht. A renewed commitment was made in 2007 when the National Organic Agriculture Development Commission was established and a plan prepared.<sup>46</sup>

### Conclusion: What of the future?

Thailand is a major food exporting country. Availability of food has improved through both higher local production and growing imports. Thailand has the capacity to produce both food and fuel crops, but has to monitor and manage the balance to safeguard long-term food security.

Access is still a problem for significant minorities. In the North and Northeast, and in the urban areas, there are poor households vulnerable to price rises. Government schemes to combat problems of food security are not well targeted.

Food safety is a growing concern because of risk of contamination during preparation, chemical residues, low-quality manufacturing, and new diseases. Monitoring is inadequate and controls are poorly enforced.

Despite some problems, the current picture of food security is relatively benign. But what of the future? What of the long-term stability of this benign situation? The potential conflict between food and fuel crops needs to be properly addressed. More importantly, there are medium-term concerns over the future of Thailand's small-scale farmer, and the whole issue of water management. Only slightly further ahead, climate change will impact food security in a major way. These three topics are addressed in Chapter 3.

#### Key issues for improving food security

- Monitoring and managing the balance between food crops vs. fuel crops.
- Targeted programmes are needed to address persistent pockets of malnutrition in poor rural areas.
- Monitoring and enforcement of standards of food quality need to be improved, covering the areas of vending, retailing, manufacturing, and importing.

<sup>43</sup> Chanida Chanyapate and Isabelle Delforge, "The Politics of Bird Flu in Thailand," *Focus on Trade*, 98, April 2004, at [www.focusweb.org](http://www.focusweb.org)

<sup>44</sup> Churnrurtai Kanchanachitra et al. *Thai Health 2006*. Nakhon Pathom: Institute for Population and Social Research, Mahidol University and Thai Health Promotion Foundation, 2006 (T)

<sup>45</sup> Charuk Chaiyarak, ed. *Health Assembly: New Mechanism for Participatory Healthy Public Policy Development*, Nonthaburi: Office of the National Health Commission, 2008 (T).

<sup>46</sup> National Committee on Organic Agriculture Development, *Strategic Plan and Implementation Plan on Organic Agriculture Development (2008-2011)*, Bangkok: NESDB, 2008 (T).

## ENVIRONMENTAL SECURITY

The Foundation for Environmental Security defines environmental security as “a condition in which a nation or region, through sound governance, capable management, and sustainable utilization of its natural resources and environment, takes effective steps toward ensuring the welfare of its population.”<sup>47</sup> We all depend on the natural environment for the air we breathe, the water we drink, the food we eat. We all also depend on the environment for making a living, some in a much more direct sense than others. All are at risk from instability, uncertainty, and change in the environment.

These risks arise in various different ways. Some arise from instability of the physical environment, including natural disasters such as earthquakes and tsunamis, and variability such as year-to-year changes in climate which can cause drought, flood, and other extremes. A second form of risk arises from changes in the supply and demand for resources because of growing population, new technologies, and economic change. Examples include declining forest cover, difficulty in gaining access to good water and over-exploitation of limited resources such as marine fish.

A third type of risk arises from economic and social shifts which change the physical environment, such as urbanization causing new problems of air pollution or industrialization generating larger quantities of waste. Finally, there are risks created when competing claims for limited resources result in conflicts.

In the rather recent past, Thailand was considered a resource-rich country. The tropical climate was highly fecund, and the population density was low. That situation has changed dramatically over the last generation as a result of rapid population growth, industrialization, urbanization, and weak management of the environment. Now, most people feel they are exposed to some risk because of new factors in the physical environment. Certain groups feel their livelihood is at risk because of the deterioration of the natural resources on which they rely. Conflicts over natural resources have become a major feature of the political landscape. Climate change is a rising concern.

### *Voices from the project discussions*

“Natural resources in the locality are being destroyed. It’s very difficult for local people to combat this.”

“The communities need to have rights over natural resources. Now the state claims control. The laws are crazy, especially over forests. There is no fairness for ordinary people.”

## Physical instability and variability

*Thailand is at some risk of geological and climatic instability that occurs rather rarely and so has not in the past warranted protective measures.*

### Earthquake and tsunami

Earthquakes are common but not a major source of risk. Over 2000-8, a total of 131 occurrences were recorded but all were of low intensity. Since 1975, there have been only eight quakes registering over 5 on the Richter Scale, the largest at 5.9 in Kanchanaburi in 1983.

The country straddles two plates, the Indian Ocean and Pacific Ocean. The two areas most at risk are in the Northwest and along the upper part of the peninsula. However recent research identified 13 shifting plates which require monitoring, and discovered that two of these (Three Pagodas and Sisawat) extend from the western hills all the way past the capital.<sup>48</sup>

By contrast, tsunamis are rare but highly risky. The wave that hit the Andaman coast on 26 December 2004 left 5,395 dead, another 2,817 missing, and 8,457 injured. In total around sixty thousand people were affected and the damage was estimated at 15 billion baht.<sup>49</sup> It is not certain when the last major tsunami hit this coast, but possibly around 150 years earlier.

Besides these immediate effects, the tsunami also impacted on the local environment. Beaches and sand dunes were damaged. Shallow groundwater

<sup>47</sup> Quoted in Somrudee Nicro and Matthew Markopoulos, *Environmental Security in Thailand*, Bangkok: Thailand Environment Institute, 2009, p. 8.

<sup>48</sup> Cabinet news release, 25 December 2007, [www.eppo.go.th/admin/cab/cab-2550-12-12](http://www.eppo.go.th/admin/cab/cab-2550-12-12), accessed 5 December 2008.

<sup>49</sup> Mahidol University, *An Environmental Impact Assessment of the Tsunami*, 2006;

Department of Disaster Prevention and Mitigation site on the tsunami, <http://61.19.54.131/tsunami/index.php?pack=overall>, accessed 27 November 2008.

was contaminated by sea water. Wells were filled up with sand. Sink holes appeared after the tsunami had shaken the underlying limestone, resulting in damage to houses, roads, wells, and drainage. In one part of Satun province, seven to eight sink holes of 1 to 3 metres diameter appeared over the space of one month.

The tsunami also damaged the mangrove forests in Ranong, though elsewhere they withstood the impact well. Damage to coral reefs was also highly variable. In some places, around half of the coral was destroyed, while elsewhere the impact was minimal.

Although a large national and international campaign was mobilized to rehabilitate the society and environment affected by the tsunami, the success was only partial. In some areas, the tsunami triggered disputes over land ownership.

The scale of the disaster was magnified by the prior over-usage of beaches and the destruction of natural defences such as mangrove forests. As a result, a 2007 government order prohibited activities in areas zoned as coral reefs, sea grass fields, and mangrove forests.<sup>50</sup> Warning systems have been installed in risk-prone areas.

In general, Thailand has improved early warning systems for tsunamis, landslides, flash floods, and inundation. But it may be difficult to sustain such measures because of insufficient collaboration between concerned agencies.

### Climatic disasters

The pattern of climatic disasters is similar. Minor, localized events are common. Major events are rather rare, and entail high risk because there is little incentive to provide monitoring and protection. Every year there is death and damage caused by intense tropical storms. On average every year there are around 2,000 incidents recorded, affecting around 100,000 people and causing 50 deaths.<sup>51</sup> These localized events can appear anywhere in the country.

Occasionally the storms that develop in the South China Sea pass south of the tip of Viet Nam and make landfall on the coast of the peninsula. Over the last 48 years, this has occurred 164 times. Eleven of these events were of typhoon strength. Occasionally these

storms arrive with great destructive force, arising not only from the wind speed but also a storm surge, created when the low pressure at the centre of the storm sucks up the sea into a wave.

The last major climatic disaster was when Typhoon Gay struck the coast of Chumphon on 4 November 1989 with winds gusting up to 120 mph. The direct casualties included 91 on a wrecked oil rig in the Gulf, 458 on shore, and over 600 missing at sea. More than 200 fishing boats were wrecked, buildings were flattened over a wide area, and large areas of orchard and farmland were devastated. The previous typhoon that made landfall on this coast had been 35 years earlier. Unlike in regions where typhoons are common, building standards, agricultural practices and warning systems are not geared to accommodate such storms and hence the damage is exceptionally severe.

### Drought and flood

Every year, parts of the country are affected by drought and flood. Seasonal fluctuations between “wet” and “dry” years are compounded by the local fickleness of monsoon rains. Each year on average around 4 million households are affected by drought and 1 million by flood. In bad years the numbers can rise to 7 or 8 million (see Figure 2.14). No province is exempt.

Over recent decades, average rainfall in the wet season (April to October) has been in decline. More strikingly, the annual variation from the average has become more erratic. Since around 1980, Thailand's monsoon rainfall has been affected by the sea surface temperature in the eastern Pacific in what is known as the El Nino effect.<sup>52</sup> In years such as 1997 and 2002, this resulted in unusually sharp droughts. In years such as 2006, it resulted in such heavy flooding that 10 percent of farmland and over 5 million people were affected. The impact of drought is also intensified by increased competitive pressure for available water resources (on which more is written below), while flood is intensified by declining forest area and blockages in waterways.<sup>53</sup>

Around one-sixth of the agricultural area is classified as highly drought prone, meaning that there is a severe shortage every one to three years. Over half of this area is in the Northeast, and the remainder mostly in the North (see Figure 2.15).

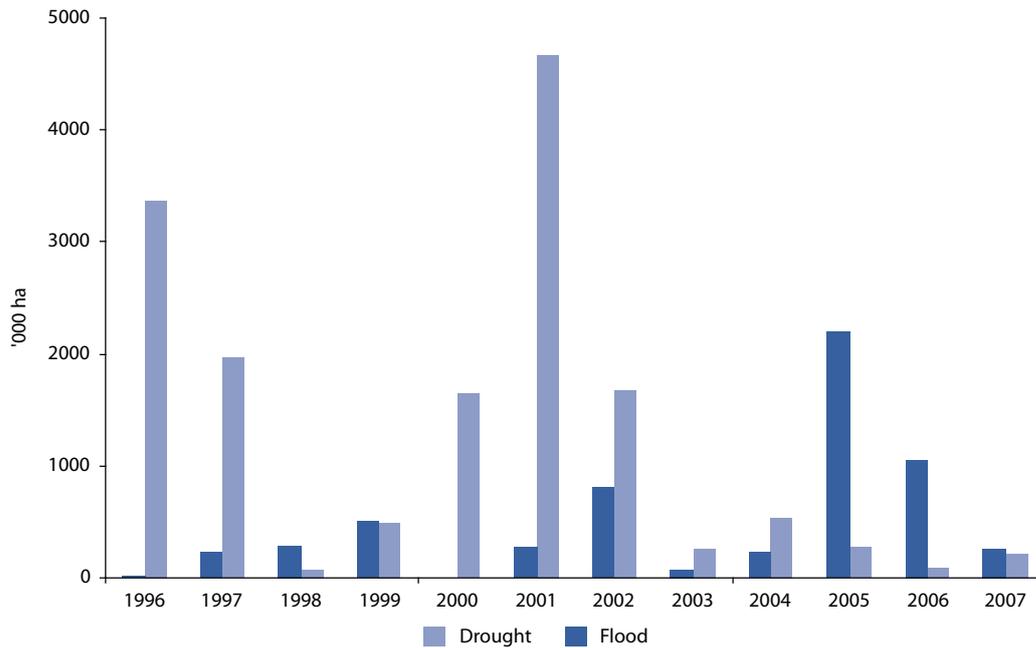
<sup>50</sup> ONEP, *Thailand State of Environment Report 2008*, p. 238 (T)

<sup>51</sup> Statistics on disasters are reported in the ONEP, *Thailand State of Environment Report*, various years (T).

<sup>52</sup> N. Singhrattana et al., “Interannual and Interdecadal Variability of Thailand Summer Monsoon Season,” *Bulletin of the American Meteorological Society*, 1 June 2005.

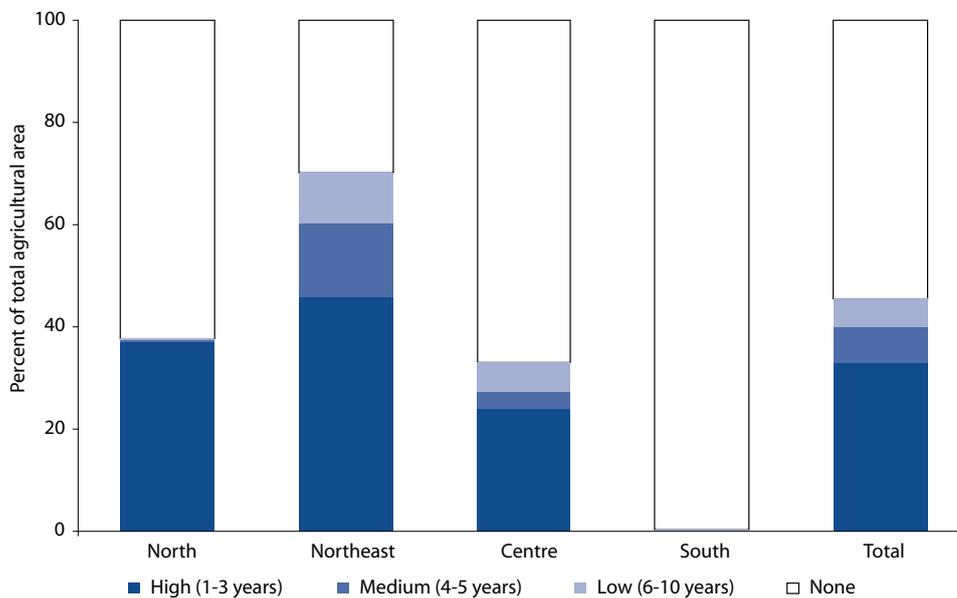
<sup>53</sup> Department of Disaster Prevention and Mitigation, Ministry of Interior, *Master Plan for Protecting and Helping Flood, Storm and Mudslide Victims*, October 2007 (T).

**Figure 2.14 Areas affected by flood and drought, 1996-2007**



Source: Department of Disaster Prevention and Mitigation

**Figure 2.15 Drought prone area, by severity and region**



Source: Department of Land Development, 2005, cited in ONEP, *Thailand State of Environment Report, 2005*

### Pressure on natural resources

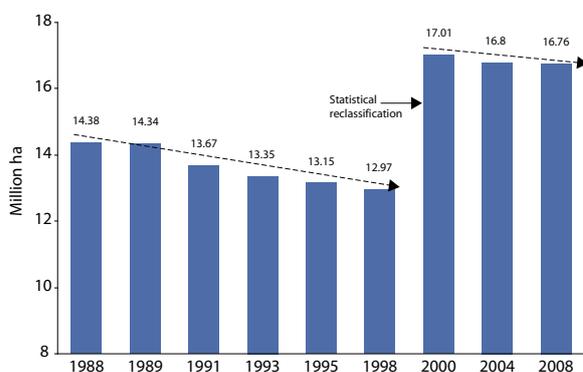
*Growing pressure on natural resources creates risks of non-sustainability, as well as disadvantages for communities that depend on them.*

The steady increase in population and economic activity exerts relentless pressure on resources. Those most vulnerable to the impact are small-scale producers who rely heavily on the natural environment. Here we will highlight just two examples, the forests and the sea.

## Forests

Forty years ago, half of the country was covered by forest. By 1988, over half of that forest had disappeared, destroyed by the twin processes of logging and agricultural settlement. In 1985, government set a target of retaining 40 percent of the area as forest, which implied a massive reforestation. In 1988 all logging was banned. Even so, the forest area has continued to diminish. The official figure of forest area jumped in 2000 when the shift from using 1:250,000 to 1:50,000 dot ratios in analysing satellite images transferred 4 million hectare from “unclassified” to “forest”. But in reality, 1.4 million hectare of forest were lost between the logging ban and this reclassification, and another 0.3 million since (see Figure 2.16).

**Figure 2.16 Forest area, 1988-2008**



Source: OAE, *Agricultural Statistics of Thailand*, various years

In an attempt to conserve forests, government has defined areas as national parks and other conservation areas. In total these now amount to around 9.6 million hectare, or 19 percent of total area. In recent years, government has been aggressive in this policy, increasing the conservation areas by almost 2 million hectare since 1995.<sup>54</sup> However, this expansion has led to conflict. Many villagers rely on forest areas for activities such as grazing and various kinds of hunting and gathering. Many people were already living and farming on land newly classified as conservation areas. In 2002, it was found that a seventh of the total conservation area was occupied, with some 460,000 families living there. According to Forestry Department regulations, people were allowed to remain if they could prove they had been there before the area was designation as conservation forest. But many settlers found this difficult owing to the lack of documentation or other forms of proof.

Negotiations have settled only a few of the ensuing disputes. Proposals to involve communities in the management of forests are accepted in principle, but efforts to legislate a framework for this plan have foundered on fundamental differences of opinion (see Box 2.3). Yet at the same time, government has proceeded to create a legislative basis for allowing national parks to be exploited for commercial purposes (see Box 2.4).

### Box 2.3 Community forests

In 1989, a politically connected business group won a concession for commercial forestry on a “degraded” forest area in Chiang Mai. Local villagers protested that the forest was far from “degraded” but was vital to the livelihood of their community. This incident began a long and unfinished battle to pass a Community Forest Bill.

In the early 1990s, two different versions of a bill were drafted, one by the Forestry Department and the other by an NGO consortium. The Department bill enshrined bureaucratic control and the continued ability to lease areas for commercial purposes. The NGO bill placed management in the hands of local communities. Both bills were submitted to parliament. Public hearings were held. By 1999, six different drafts were in circulation. Attempts to negotiate a compromise failed.

In 2001, an NGO bill passed the lower house but was rejected by the Senate. A revised draft was prepared but remained trapped in the approval process. In 2007, the Legislative Assembly formed under the 2006 coup government considered versions of both the “official” and “NGO” bills, and passed the former in the dying days of its term. The NGO lobby fiercely criticized the bill for excluding local communities from access and management. The legislation was later suspended on grounds that the legislature had been inquorate at the time the bill was passed, and the Constitutional Court has not yet given a ruling whether the legislation is valid or not. Twenty years on, the issue of community forest legislation, which affects countless people, remains unresolved.

<sup>54</sup> ONEP, *Thailand State of Environment Report 2006*, p. 96 (T).

### Box 2.4 Sustainable tourism?

In many countries, areas of great environmental value are designated as national parks in order to conserve the environment. In Thailand, the policy on national parks has not been so clear-cut.

In the early years, government declared several areas as national parks but did not protect their resources. In many cases, park status highlighted the area's value as a tourist attraction and in effect spurred commercial development. Once such development had reached a certain scale in any park, government was unwilling to oppose the commercial interests or prejudice tourist arrivals. Many of Thailand's most famous tourist spots began this way (Phi Phi Island, Samet Island, Similans). Only in Khao Yai, a forest park mostly serving domestic tourism, was some commercial development cut back on environmental grounds.

More recently government has taken an active role in promoting the conversion of national park into commercial tourist development. In 2003, a decree on Designated Areas for Sustainable Tourism Administration (DASTA) allowed the government to designate a reserved area for joint public-private development, and to distribute concessions for private projects in the area. The first area designated was Chang Island where government invested 540 million baht to build boat quays and other infrastructure, and encouraged entrepreneurs to invest in resorts and other facilities. The DASTA format was also used to create a Night Safari inside a national park in Chiang Mai, and to promote further development in areas such as Samet Island, Phi Phi Island, Chao Mai Beach, islands in Trang, and mountain areas in Loei.<sup>55</sup>

In addition, government broached a plan to privatize several national parks catering mainly to domestic tourism by designating them as special economic zones.

The plan was fiercely opposed by academic environmentalists and NGO activists, and had not been implemented when the government of the time fell.

One consequence of declining forest cover has been increased risk of landslides and mudslides, often with fatal results. With large areas of steep mountainside and sharp monsoon rains, the peninsula has always been prone to landslides. A disastrous slide which killed 371 people in Nakhon Si Thammarat in 1988 prompted the national logging ban. But since 1999, landslides have become annual events in the North as well. The worst year was 2004 with thirteen.<sup>56</sup>

### Marine catch

The sustainable level of marine catch in Thailand's waters is estimated at 1.69 million tons a year. That level was reached in the mid-1970s. Since then, with the use of more advanced fishing gear, the actual catch increased rapidly to reach 2.64 million tons in 2004. As a result of over-fishing, the efficiency declined rapidly. The catch-per-unit-effort (CPUE) declined from 62 kilograms per hour in 1984 to 23 kilograms by 2003.<sup>57</sup> As a result, large-scale Thai fleets increasingly fish outside Thai territorial waters, while smaller operators compete for a declining supply inside those waters. This has led to conflicts.

In Thai waters, 91 percent of the catch in 2003 was caught using trawl nets, purse seine nets, and push nets. This gear is highly efficient for the entrepreneur, but very bad for the environment. Corals and seaweed also get destroyed. Around half of a trawler's catch consists of infant fish, contributing to the trend of decline in potential catch.<sup>58</sup>

By law, the sea within 3 kilometres of the coastline is reserved for small-scale fishermen. But in the competition for a declining potential catch, boats with advanced gear intrude into this zone. This has led to a long-running battle between small- and medium-scale fishermen along the length of the Thai coastline. Although there are laws that specify zones and impose restrictions on gear, these are consistently breached. The main people at risk are small-scale fishing communities who do not have the political resources to ensure laws are enforced. But overall everyone loses, owing to the failure to maintain a sustainable level of catch.

<sup>55</sup> Sukran Rojanapawong, ed., *State of the Thai Environment 2005*, Bangkok: The Green World Foundation, 2005. (T)

<sup>56</sup> Department of Disaster Prevention and Mitigation, Ministry of Interior, *Master Plan for Protecting and Helping Flood, Storm and Mudslide Victims*, October 2007 (T).

<sup>57</sup> ONEP, *Thailand State of Environment Report 2006*, pp. 141–2 (T).

<sup>58</sup> *Ibid.* pp. 80, 82, 146.

## Pollution and waste

*Growing levels of pollution are a risk for almost everyone, but especially for those who live close to big industrial zones, quarries, and power plants. Facilities to manage waste lag far behind the increase in waste production.*

### Air quality and noise pollution

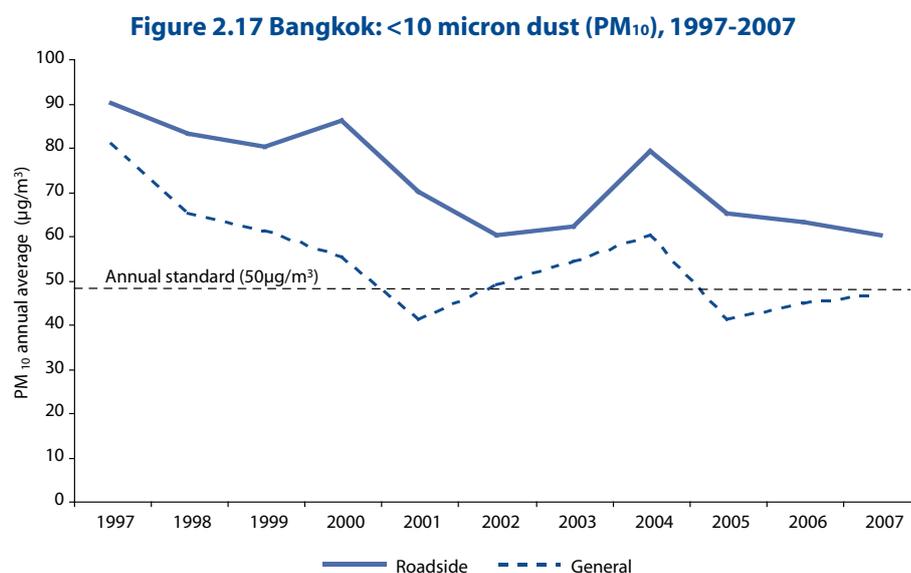
During rapid economic growth from the mid-1980s to the mid-1990s, the air quality in the capital deteriorated rapidly. The main reasons were the exhaust from more vehicles travelling at low speeds, and the dust from more construction. By 1997, the levels of suspended particles had risen far above minimum safety levels. The incidence of respiratory diseases is closely correlated to air pollution. The capital's inhabitants were to some extent at risk. suffered high rates of respiratory disease.

In the late 1990s, several measures were imposed to combat this problem, including tighter controls on vehicle emissions, and closer regulation of construction sites. As a result of these measures, pollution levels came down sharply over two to three years, but since then have been more or less stagnant (see Figure 2.17). The overall measure of suspended particles fluctuates around the minimum standard. The measure at street-side is still significantly above. In short, everyone remains slightly at risk. Those who work on the street, including drivers, policemen, vendors and others, remain at relatively high risk. Similar conditions are found in urban areas adjacent to the capital, and in Chiang Mai.

To combat air pollution, the government has phased out lead in petrol, gradually reduced the sulphur content of diesel fuel, encouraged the use of gas in automobiles, imposed European standards on the manufacturing of new vehicles, and switched motorcycle production from two-stroke to four-stroke. Yet these measures have failed to reduce pollution below acceptable levels, partly because many old vehicles are still in use, and partly because the stock of vehicles has been increasing and the average road speed decreasing. Any further substantial reduction will require a shift to more efficient public transport.

In 2007, areas of the North experienced haze from the onset of the hot season in February through to the early rains (usually in April). The suspended matter was measured as double the safety standard (396.4 micrograms per cubic metre over a 24-hour average), and ozone levels were above safety ceilings. According to national data, forest fires within Thailand have been on the decline, though not totally eliminated. Satellite images show that hotspots both in Thailand and in adjacent areas of neighbouring countries may be contributing to the problem. The dry, still air in this season allows smoke particles to linger. The haze has recurred regularly in subsequent years.<sup>59</sup>

Elsewhere air pollution is a result of quarrying, rock grinding, and cement production. The most intense area is in the Na Pralarn sub-district of Saraburi province, but occurs locally around quarry areas throughout the country. Since 1997, as a result



Source: Pollution Control Department, *Thailand State of Pollution Report*, various years

<sup>59</sup> Pollution Control Department, *Thailand State of Pollution Report 2007* (T).

of protests and complaints, state agencies have collaborated to draw up an action plan to control the air and noise pollution from these areas. As a result, the average pollution output in the pilot area of Na Pralarn has remained below the safety standard from 1998 onwards, but the peak output is still far above.<sup>60</sup>

Respiratory diseases are the single largest category of illness among outpatients at public hospitals.

In 2007, there were 444 hospital visits for this illness alone for every 1,000 population.<sup>61</sup>

Noise pollution for the most part has similar causes and a similar pattern as air pollution. In the capital, measured noise levels, created especially by traffic noise, hover around a minimum acceptable standard. Elsewhere, the trouble spots are close to mining industries and rock-grinding plants. A special noise problem has been created by the construction of Bangkok's new international airport (see Box 2.5).

### Box 2.5 Noise pollution in Suvarnabhumi Airport area

Noise from Thailand's new international airport has severely affected the adjacent communities since the first day of its operation on 28 September 2006.

In the environment impact assessment, surrounding areas had been categorized into three. Where the daily average noise level exceeded 70 dBA, the Airports Organization of Thailand (AOT) was obliged to purchase any land and structure built prior to 2001. In the second zone, the AOT was obliged to check the noise level monthly and provide compensation if the noise level increased by 10 dBA. In the third zone, the AOT was obliged to fund mitigation measures in places that specifically require tranquillity such as schools, hospitals, and religious compounds, and to provide compensation if the noise level rose by more than 10 dBA.

But the AOT simply ignored these guidelines, and no land or structure was purchased before the airport opened. In addition, the flight paths were modified so the distribution of noise did not match the pattern that had been publicized in advance. Local communities protested angrily. In November 2006, the cabinet ordered the AOT to redraw the zones based on actual noise levels, to buy lands and structures in the first two zones from those who wished to move out, and to fund mitigation measures for those who opted to stay.

The local communities were satisfied with this decision. But no action was taken. The AOT complained that it could not afford to buy 28,000 houses at a cost of 153 billion baht. On 12 May 2007 a thousand people dressed in black and staged a rally at the airport passenger terminal. Immediately after, the cabinet modified its ruling, obliging AOT to buy land and structures only in the first zone, and to pay for mitigation elsewhere. This reduced AOT's responsibility to purchasing only 766 houses at a cost of 12.6 billion baht, and funding mitigation measures in another 18,293 dwellings. Still the AOT was reluctant to comply.<sup>62</sup>

A big break for AOT came when the provincial court ruled in July 2009 that as the area had been designated an "aviation safety zone" since 1973, the local communities were not entitled to any compensation. In any case, the government insisted that the AOT observe the good governance guidelines and compensate them. The AOT shareholders' meeting in January 2010 agreed to allocate over 11 billion baht to buy the land or fund additional infrastructure to mitigate the impact in 605 buildings in the inner zone, and to sponsor the improvement of 15,283 buildings in the outer zone.<sup>63</sup>

Total net profit of AOT from 2005 to 2008 was 26.2 billion baht. Seventy percent of the shares are owned by the Ministry of Finance. The latest decision resulted in 90% drop in AOT's annual profit.<sup>64</sup>

This case illustrates the risks that arise because of the difficulty of enforcing the stipulations of environmental impact assessments, particularly when dealing with state or semi-state agencies.

<sup>60</sup> Data from the Department of Mineral Resources, [www.dmr.go.th/news/department/forty-seven.html](http://www.dmr.go.th/news/department/forty-seven.html), accessed 26 November 2008.

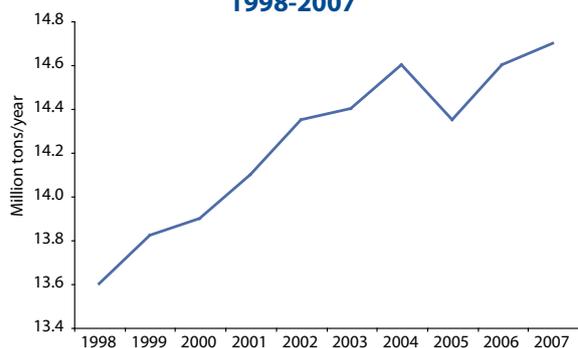
<sup>61</sup> Data from the Health Information Unit, Bureau of Health Policy and Strategy, MOPH.

<sup>62</sup> *Green World*, vol. 16, no. 94, September-October 2007, pp. 18–32 (T); *KrungThep Thurakij*, 11 November 2009 p.14 (T).

<sup>63</sup> *KrungThep Thurakij*, 10 November 2009, p 5 and 23 January 2010, p.5 (T)

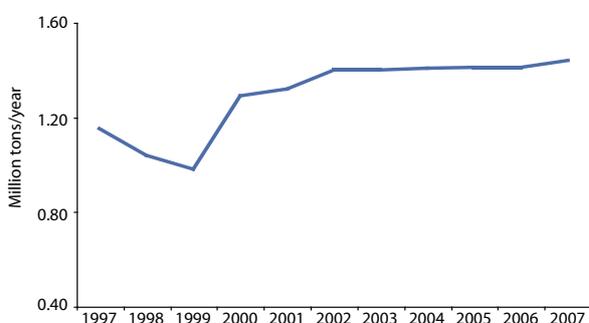
<sup>64</sup> *KrungThep Thurakij*, 23 January 2010, p.5 (T)

**Figure 2.18 Volume of municipal waste, 1998-2007**



Source: Pollution Control Department, *Thailand State of Pollution Report*, various years

**Figure 2.19 Volume of hazardous industrial waste, 1997-2007**



Source: Pollution Control Department, *Thailand State of Pollution Report*, various years

## Waste management

Urban growth and industrial growth generate increasing volumes of waste of various kinds. But the capacity to dispose of this waste lags behind.

Total municipal waste has increased steadily at a rate of around 10 percent a year, and in 2007 was around 14.7 million tons (see Figure 2.18). Of this, 12.36 million tons was collected. Most of this could theoretically be recycled or converted into organic compound. In practice, around two thirds is either disposed of in open-air dump sites or burnt.<sup>65</sup> Both methods are polluting and have health risks.

About 0.4 million tons of this municipal waste is hazardous. There is no system for separating the collection. Some types, such as lubricant oil and batteries, are recycled by "pickers" who sort through the dump-sites – a highly dangerous occupation. Some municipalities, including the capital, are working with the government's Pollution Control

Department to devise better systems for isolating hazardous waste.

The volume of hazardous industrial waste (see Figure 2.19) is estimated at 1.4 million tons a year. Although firms are required to report movements of hazardous substances, the returns are incomplete. Since 2002, the reported volume has been static, which seems unlikely given the expansion of certain industrial sectors, especially petrochemicals.

According to the official returns, 66 percent of hazardous wastes is sorted and reused, 3 percent is treated, 21 percent sent for landfill or incineration, and the remaining 10 percent disposed in other ways.<sup>66</sup> Until 2002, there were few waste treatment centres. More recently the government has promoted waste-sorting, landfill, and recycling industries. But many firms still take the cheap option of open-air dumping. Instances of illegal dumping of hazardous materials are revealed in the press from time to time.

## Industrial pollution

Controls on industrial waste disposal and industrial pollution are limited. Small factories often release untreated or poorly treated waste onto dumps or into rivers. With great regularity there are outcries when fish suddenly die in a certain stretch of river, and with great regularity too, culprits are hard to find. The lower reaches of some rivers, particularly the MaeKlong, are sites of persistent conflict between industries and those who depend on the river water including farmers, fishermen, and residents. But the problem is best illustrated where it is at its most intense.

Since natural gas from wells in the Gulf of Thailand was pipelined onshore there in 1981, Map Ta Phut has become the focus of the most intense industrial development in Thailand. Moreover, the industries clustered there on account of the gas include petrochemicals, chemicals, steel, cement and other heavy industries, all with high potential for pollution. By 2008, there were 117 plants, most large scale.

From the mid-1990s onwards, there were rising complaints from local villagers, and a steady stream of incidents including a whole school of children and teachers falling sick with respiratory diseases in 1997. Executives of some plants admitted privately that the pollution was simply unmanageable.

<sup>65</sup> Pollution Control Department, *Thailand State of Pollution Report 2008*. (T).

<sup>66</sup> *Ibid.*

In the mid-2000s, the evidence of out-of-control pollution began to accumulate. The incidence of leukaemia was five times the national average. An unusually large number of genetic defects had begun to appear. The National Cancer Institute found high rates of respiratory disease and lung cancer. A 2006 report found that the accumulation of heavy metals in the local environment far exceeded safety levels – cadmium by 6 times, manganese by 34 times, lead by 47 times. A 1998 study found heavy concentrations of ten carcinogenic compounds in the atmosphere.<sup>67</sup>

In 2007, there was a proposal to extend the industrial zone into an area previously zoned for residence and agriculture in order to accommodate additional plants. Villagers took the opportunity to demand that the whole area be designated as a pollution control zone, requiring the Pollution Control Department to strictly enforce environmental controls, especially on toxic emissions. The Department backed the proposal. In reality, it was surprising that this area had not been designated long before as its industrial concentration was greater than thirteen other areas already designated.

Business owners objected to the designation. The industry minister agreed to let the expansion go ahead with a cooperative plan by local plants to invest more in emission controls, clean up the mess, and provide more health facilities for local inhabitants. Local activists responded by petitioning the provincial administrative court to mandate the zone. The court ruled in their favour in March 2009 and ordered the NEB to announce the pollution control zone within 60 days. The Federation of Thai Industries put pressure on the government, through the National Environmental Board, to appeal against the ruling. The Federation argued that the designation would put future investment at risk and imperil the national economy. It even argued that the designation as a pollution control zone would harm local agriculture and tourism by drawing attention to pollution. The joint foreign chambers also argued against the designation. But the government held firm.

While the preparation for the pollution control zone was underway, the communities called, without success, for halting new projects until the pollution control plan was finalized. An NGO and the communities filed another law suit against 8 government agencies for having approved and given

permissions to 76 industrial projects in violation of the Constitution. The Central Administrative Court's decision in September 2009 to suspend these projects until they satisfy the requirement of Section 67 of the Constitution that requires projects likely to have severe impacts on the community's environment or health to conduct environment health impact assessments, hold public hearings, and complete an independent review. The ruling was a heavy blow on the government and the industry as the value of the projects, a few of which were owned by very large and powerful public companies and state enterprises, were estimated at 300,000 million baht. In December 2009, The Supreme Administrative Court confirmed the lower court's ruling for 65 projects, but cleared 11 projects deemed unlikely to produce severe impacts.

Although the Constitution had been in force since August 2007, the government and the agencies concerned had not developed secondary laws and regulations to put Section 67 into action. To rectify the situation, to overcome the public's distrust, and to boost the business community's confidence, the government appointed a committee consisting of government agencies, local communities, the industry, and independent experts, chaired by a well-respected former prime minister, to develop key mechanisms in support of the implementation of Section 67. The committee planned to finish its task in early 2010.

The out-of-control pollution of the Map Ta Phut area has put the health and lives of local people at risk. But the resistance of the local industries to closer monitoring and control has other risks as well. For years now, NGOs have used a simple strategy to rally local communities to oppose industrial zones and other large-scale projects in their locality. They bring representatives of the communities to Map Ta Phut, and let them smell the air, see the deformed children, and listen to the local villagers recount the history of sustained intransigence by local factories and inaction by the government. It has been very effective strategy. Now, they have discovered another highly effective weapon. After a long and difficult struggle, the law and the court are finally on their side.

### **Conflict over natural resources**

*Activists who lead resistance against natural resources are at high risk. Weak systems of environmental management are to blame.*

<sup>67</sup> Raine Boonlong, *Representation and Who Decides in Energy Planning*, Ethics of Energy Technologies in Asia and the Pacific (EETAP) Project, RUSHSAP, UNESCO, Bangkok, 2009.

Until the mid-1980s, government was able to build large infrastructure projects such as dams, roads, and power plants without needing to heed queries about the impact on the environment or on the livelihood of local communities. State agencies became accustomed to justifying their projects as contributions to national development, and demanding that those affected “sacrifice” their private interests for this goal. This situation changed dramatically over the late 1980s and 1990s. Local activism increased. NGOs became more active.

As the best sites for hydropower dams were used up, the ratio between project benefit and the damage to environment and communities began to change rapidly in proposed future projects. State agencies continued to promote projects though the apparent benefits seemed small in comparison to the costs. Coalitions of activists and local communities were pitted against teams of agencies, contractors and speculators, often twinned as local politicians. Projects such as the Pak Mun dam, which damaged a prolific river fishery to generate enough electricity for a small department store, and the Mae Moh lignite-based power station, which caused far more pollution than predicted, became symbols of bad planning and bad faith.

The Enhancement and Conservation of National Environmental Quality Act 1992 enshrined the “polluter pays” principle, and laid down a stricter system of environmental assessments for large projects. Public hearings were introduced through a prime minister’s regulation in 1996. The 1997 constitution granted local communities rights to “participate in the management, maintenance, preservation and exploitation of natural resources and the environment in a balanced fashion.” These landmarks provided encouragement for environmental activism. Government created an Office of Natural Resources and Environmental Policy and Planning to act as an official watchdog.

But there was no easy legal route to enforce the rights provided under the constitution, and techniques were developed for evading tough environmental assessments. In 2003, the Ministry of Natural Resources and the Environment appointed a committee to review the whole EIA process. This committee proposed a detailed structure for the EIA process with full participation by all involved, a new fund to pay the expenses, and a new independent organization to oversee the EIA

process. Subsequently the ministry expanded the EIA process to a wider range of projects, incorporated health and social assessments, and provided more channels for participation. But the proposals for an independent organization and better funding have not been realized.

In practice, the only effective defence was public protest. Through the late 1990s and 2000s, the campaigns expanded from dam projects to protest against quarries, mines, wastewater projects, industrial zones, pipelines, and power plants. The campaigns against two coal-fired power-plants planned for pristine areas on the east coast of the peninsula were successful, partly because the campaigners were able to expose the subterfuge in the environmental assessments.

Experience over the past two decades has taught community groups and environmental NGOs that opposition to a project must begin early. Once the Pak Mun dam was built, government was reluctant to discard it, even though the project was widely condemned. Similarly, government is hesitating over the final fate of the Khlong Dan wastewater project because it is reluctant to write off its investment. By moving more rapidly in the cases of the Tha Chana pipeline and Bo Nok and Hin Krut power projects, the opposition campaigns had greater success. However, government agencies still show bad faith in the way they confront such opposition. Information is withheld. Public hearings are manipulated. Efforts are made to split communities. Even if, as in the cases of the power plants, the opposition is nominally successful, the local costs can be large.

The chief campaigner against the Bo Nok power project, Charoen Wat-aksorn, was shot dead on 1 June 2004. The culprits have not been found. According to the National Human Rights Commission, Charoen is only one of 19 activists murdered between 1999 and 2008. Several others have narrowly escaped assassination attempts, or been beaten up, or suffered various other forms of intimidation.<sup>68</sup>

Nearly all the victims were killed in hand-gun shootings, the classic form of killing by paid assassins in Thailand. In only a few cases were the gunmen found, and in even fewer cases were the masterminds identified. Local politicians and officials were often involved. Quarries and polluting factories were often the focus of the local dispute. The victims were mostly prominent members of local campaigning organizations.

<sup>68</sup> [www.nhrc.or.th/news.php?news\\_id=270](http://www.nhrc.or.th/news.php?news_id=270), dated 9 December 2005, accessed 25 July 2009.

People are organizing themselves to defend natural resources which they value against exploitation by businessmen often working in conjunction with officials and local politicians. These disputes become violent because of failure in the legal and institutional framework for managing environmental issues. The murdered activists are the victims of that institutional failure.

### **Strengthening environmental governance**

Under the leadership of the Office of National Resources and Environmental Policy and Planning (ONEP), environmental policy has attempted to enhance environmental security and reduce structural violence by decentralizing management, improving access to information, and promoting participation. ONEP has adopted five guiding principles, namely polluter-pays, public-private partnerships, precaution, public disclosure, and beneficiary pays.

Yet, there remains an urgent need for a stronger and broader framework for managing the environment. Enabling legislation is required to give meaning to the constitutional rights of communities to participate in decision-making on environmental issues. The proposal for an independent body overseeing the EIA process deserves consideration. The Enhancement and Conservation of National Environmental Quality Act 1992 was a landmark, but always had limitations and is now out of date. A replacement is needed. That replacement should adopt certain principles and approaches.

Natural resources are inter-related, and need to be managed in an integrated way. Resource management should include not only resource utilization but also conservation, rehabilitation, and promotion of efficient and sustainable use. It should be participatory from planning and implementation through to monitoring.

Access to information must be guaranteed. The rules for public hearings should be clarified, tightened and enforced. Environmental impact assessments and health impact assessments should not only be mandatory, but should be made available for much closer public scrutiny than in the past. Strategic environmental assessments are needed ahead of project planning to screen out bad projects. The public must have legal recourse to protest and punish attempts to manipulate the procedures of project appraisal, either by state agencies or commercial interests.

Often the communities that are disadvantaged by large projects are among the most marginal groups who are not well equipped to object. In several cases over the last two decades, their sensitivity to natural resources has helped to prevent irreversible destruction of the environment. The state needs to be more open to listening to local voices, including those of minorities.

### **Conclusion: Weak management**

The tsunami tragedy of 2004 has led to greatly increased awareness of natural disasters, and led to several projects for monitoring and prevention. Major typhoons occur rarely but are highly devastating.

Each year on average around 4 million households are affected by drought and 1 million by flood. In bad years the numbers can rise to 7 or 8 million. The climate is already becoming more erratic, and the issue of water management more critical.

Growing population and increased economic activity exert relentless pressure on the stock of natural resources, particularly forest and marine resources. Communities dependent on these resources are most vulnerable to the impact. Just enforcing existing laws (e.g., on marine equipment), and completing proposed legislation (e.g., the community forestry bill) would help a lot.

Management of pollution and waste needs improvement. Better zoning would assist communities who find themselves beside industrial zones, quarries, and power plants. More investment is needed in facilities to process and recycle the growing volumes of domestic and industrial waste.

Water is perhaps the most important resource, the most abused, and the most at risk in the future. The problems are complex because there are so many interlocking natural processes involved, and so many different stakeholders interested. The issue is considered in Chapter 3.

The issue of environmental security that is fast approaching, and that needs more research, more awareness and higher priority on the national agenda is climate change. That is also considered in Chapter 3.

### Key issues for improving environmental security

- Authorities must maintain the warning systems installed since the 2004 tsunami, and also consider better warning systems for severe typhoons.
- The current trends of more erratic rainfall, with more damage from flood and drought, point to a need for better water management at all levels.
- Better programmes are needed to rehabilitate forests and enhance forest cover, especially given the prospect of climate change.
- The long-running issue of legislation on community forests should be settled.
- Regulations to protect small-scale producers, whose livelihoods depend heavily on natural resources, need to be properly enforced.
- Programmes on air pollution must move beyond monitoring to full enforcement of standards, particularly in critical urban and industrial areas.
- More investment is needed in facilities and procedures for managing waste, both domestic and industrial, and especially hazardous wastes.
- Efforts are needed to make better waste and pollution management an important aspect of Corporate Social Responsibility.
- In major industrial zones, considerations of economic growth and private profit should not be allowed to overshadow issues of the health and security of the resident population.
- There is an urgent need for a stronger and broader framework for managing the environment, starting with legislation to supersede the Enhancement and Conservation of National Environmental Quality Act 1992.
- Those responsible for the murders of the environmental activists and the use of violence in other ways to disrupt protest campaigns must be brought to justice.
- The state needs to be more open to listening to local voices, including those of minorities.
- Environmental agencies should seek more international cooperation for technology transfer, capacity development, and research and development.

## HEALTH SECURITY

Health security encompasses people's vulnerability to diseases and accidents, as well as their access to adequate health care. In Thailand over the past decade, this sector has been an area of extraordinary change. Some older health risks have diminished. Some new ones have appeared. The creation of a Universal Health Care system has dramatically improved access to health care for millions of people. Activists within the health sector have spearheaded a new emphasis on preventative and holistic health care. While these advances have generally improved health security, there are major challenges ahead in the face of economic crisis, and a rapidly ageing society.

### Old risks and new

*Some major health risks, including HIV/AIDS, have become less threatening. But cancer, heart disease, traffic accidents and new variants of flu loom larger.*

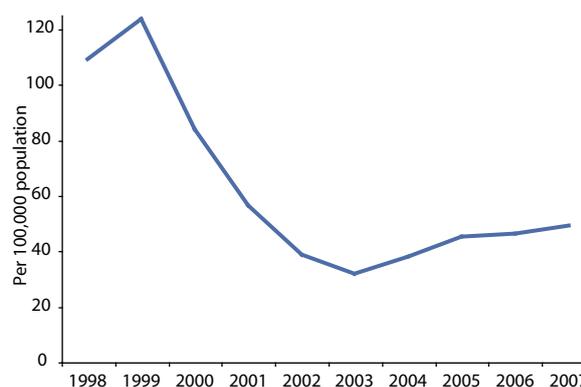
The public health system has an extensive nationwide network of provincial and district hospitals, community health centres, plus almost one million village health volunteers. Thailand has been outstanding for its success in expanding primary health care provisions that lower health risks. Examples are vaccination programmes, and mother and child health care

### Patterns of disease

There has been some success in combating major communicable diseases. By the early 2000s, Thailand had met its MDG targets for malaria and HIV/AIDS, while the target for tuberculosis was regarded as "potentially achievable."<sup>69</sup>

Malaria is confined to border areas and generally exhibits a downward trend (see Figure 2.20), but has become increasingly difficult to treat due to drug resistance. The most problematic area is along the Thai-Myanmar border where political issues restrict access by health personnel.

**Figure 2.20 Reported cases of malaria, 1998-2007**



Source: Department of Disease Control

During mid 1980s and 1990s, Thailand waged a successful campaign against the spread of HIV/AIDS. Recent data concluded that the present epidemic dynamic has evolved to a combined generalized and concentrated epidemic. Although HIV prevalence in military conscripts and pregnant women has dropped, higher rate was detected among 2nd and 3rd pregnancies, indicating that the infection is spreading more deeply into families. For other groups, the trend has declined with notable exceptions of drug injectors and men who have sex with men.

**Table 2.3 Number of persons infected with HIV and number of AIDS cases 2005-2011 as projected by the Asian Epidemic Model**

Projections	Year						
	2005	2006	2007	2008	2009	2010	2011
Number of new HIV infections	16,513	15,174	13,936	12,787	11,753	10,853	10,097
Cumulative number of HIV infections	1,073,518	1,088,692	1,102,628	1,115,415	1,127,168	1,138,020	1,148,117
Number of persons living with AIDS	562,243	556,848	546,578	532,522	516,632	499,324	481,770
Number of new AIDS cases	50,254	50,814	51,091	50,657	49,049	46,272	42,992
Number of deaths from AIDS	18,843	20,797	24,830	26,935	27,680	28,123	27,557
Cumulative number of deaths from AIDS	513,268	534,065	558,895	585,830	613,510	641,633	669,191

Source: Thai Working Group and A2 Thailand, HIV/AIDS Projection in Thailand 2005-2025 using the Asian Epidemic Model.

<sup>69</sup> NESDB and the United Nations Country Team in Thailand, *Thailand Millennium Development Goals Report 2004*.

Despite the reduced prevalence as detected by the surveillance system, there were warning signs from pilot studies, behavioural surveys that suggest continued and a new possibility for HIV spread.<sup>70</sup> In 2009, having recognized the renewed threat of HIV/AIDS, the National AIDS Commission set targets and developed an acceleration plan to halve new infection by 2011.

Tuberculosis is more problematic (see Figure 2.21). In 2008 WHO ranked Thailand as 18th highest among 22 countries classified as having a severe TB problem. The most prominent type of TB is pneumonia, and more than one third of these cases are HIV/AIDS related. About one-third of AIDS patients die from TB, and that proportion is going up.

More menacing are chronic non-communicable diseases (see Figure 2.22). Hospital admissions for hypertension, heart disease, diabetes, and cancer have all increased sharply in recent years. Deaths from cancer have been rising steadily (see Figure 2.23), and cancer is now the first-ranked cause of death, while heart disease ranks 4th. The increases in these problems are driven by environment and lifestyle – more stress, less exercise, unhealthy diet, pollution, and risky behaviour such as smoking and alcohol consumption.

## Emerging infectious diseases

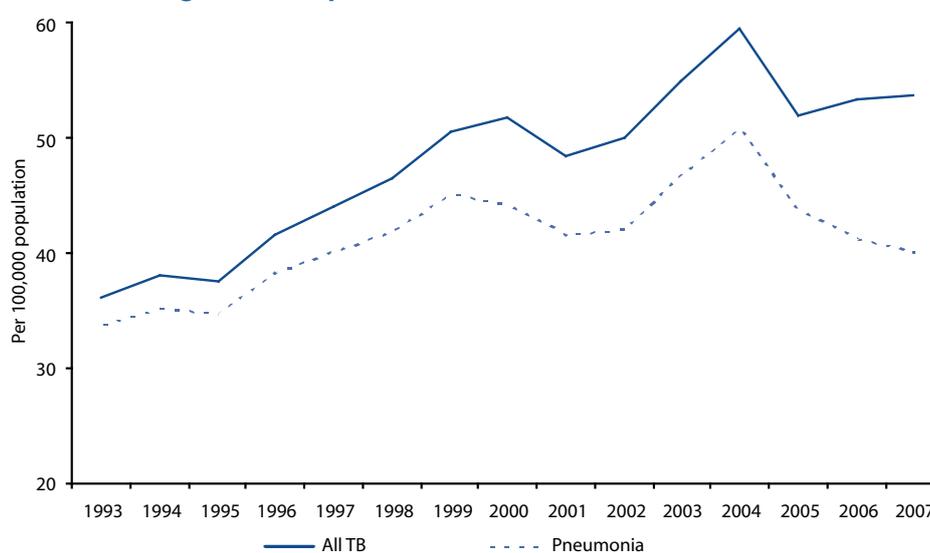
In the past five years, there have been threats from new infectious diseases on a regional and worldwide scale. Many public health experts fear a major worldwide flu epidemic resulting from the interaction of human influenza and animal-based variants.

The regional outbreak of avian flu in 2003 was a special cause for concern because of the vast scale of Thailand's poultry industry. At its height in early 2004, the epidemic spread to 42 of Thailand's 76 provinces. An estimated 60 million birds were slaughtered before the epidemic was brought under control in May 2004. Later that year, a national bird flu committee was established to counter future risks. A second outbreak from July 2004 to April 2005 resulted in the cull of another 3 million birds across 51 provinces, and a third outbreak in July-December 2005 resulted in a cull of 400,000 birds.<sup>71</sup> The last appearance was in July 2006

Through this period, there were 25 human infections and 17 deaths in Thailand from bird flu.

In 2003, Severe Acute Respiratory Syndrome (SARS) emerged in Southern China and rapidly spread to 29 countries including Hong Kong, China, Taiwan, Province of China, Singapore and Viet Nam. Internal

**Figure 2.21 Reported cases of tuberculosis, 1993-2007**

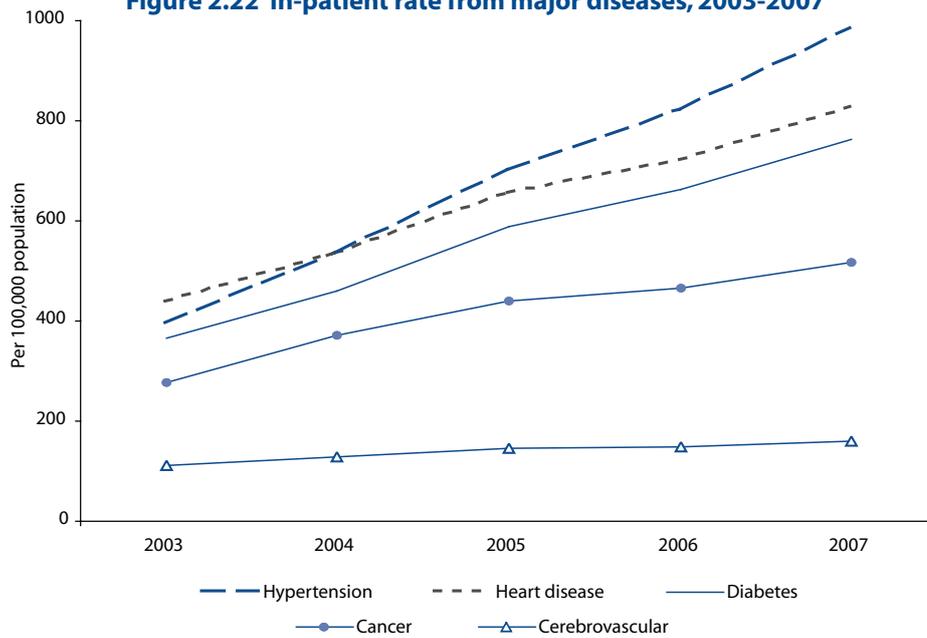


Source: Department of Disease Control

<sup>70</sup> National AIDS Prevention and Alleviation Committee. *UNGASS Country Progress Report: Thailand, Reporting Period January 2006-December 2007, 2008*. pp.2-3.

<sup>71</sup> Data from the Department of Livestock Development, MOAC, and the Department of Disease Control, MOPH.

**Figure 2.22 In-patient rate from major diseases, 2003-2007**



Source: MOPH, Bureau of Health Policy and Strategy

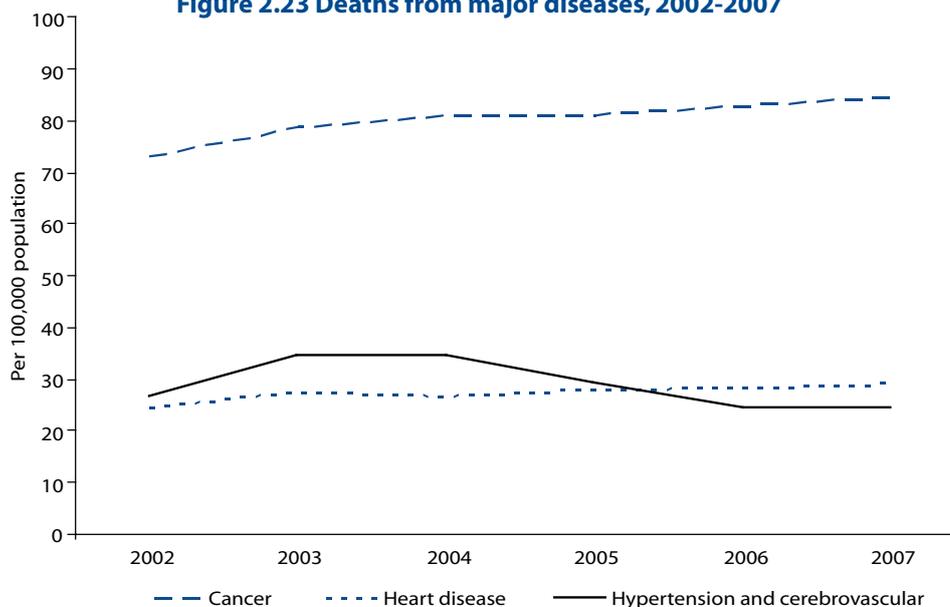
infection took place in nine countries, involving 8,098 infected cases and 744 deaths. Thailand was not directly affected. There was only a single confirmed case, and a few suspected cases, all people who had travelled in affected countries.<sup>72</sup>

health sector has developed systems to cope with such health emergencies, including a Surveillance and Rapid Response Team and an emergency response plan, but it is doubtful whether these would be adequate in a major crisis.

In 2007, influenza claimed 15 lives in Thailand, the highest incidence in the past decade. The public

In May 2009, an epidemic of type-A (H1N1) swine flu broke out in Mexico and rapidly spread around the

**Figure 2.23 Deaths from major diseases, 2002-2007**



Source: MOPH, Bureau of Health Policy and Strategy

<sup>72</sup> Bureau of Emerging Infectious Diseases, Department of Disease Control, "Emerging Infectious Diseases," 21 October 2008, at <http://beid.ddc.moph.go.th/images/stories/word/situationeid.doc>, downloaded 17 April 2009.

world. During late April- late September 2009, there were 165 deaths in 54 provinces in Thailand. The morbidity rate was 38.63 per 100,000 population.<sup>73</sup>

### Motor accidents

Thai people run a high risk of being involved in motor accidents which are now the third-highest cause of death.

In 2004, the worldwide average death rate from motor accidents was 19.0 per 100,000 population. In middle-income countries, it was 20.2, and in Southeast Asia 18.6. Thailand's figure of 22.2 is high by comparison.<sup>74</sup> Four-fifths of the victims are male. Two-thirds involve motorcycles.

Over the past decade, deaths and injuries from motor accidents rose rapidly (see Figure 2.24). Deaths have since contracted back close to the old level, but injuries remain much higher than before (125 as against 85 per 100,000), and material damages have more than tripled.

Much of the risk is a result of personal carelessness – not fastening seatbelts, not wearing helmets, driving while drunk. Large numbers of casualties occur in festive periods, partly because so many people travel at these times, and partly because many of them drink.

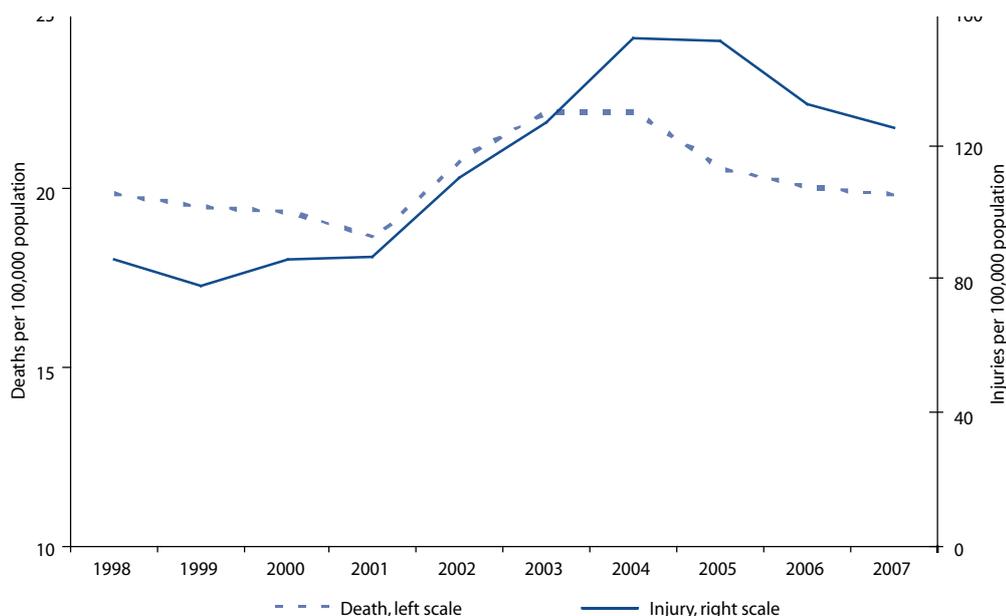
Since 2003, these high rates have attracted government attention and prompted government safety campaigns. These have had variable results. A campaign for motorcyclists to use headlights at all times was generally successful, and may have contributed to a distinct break in the upward trend of motorcycle accidents after 2005 (see Figure 2.25). Campaigns on car seatbelts, motorcycle helmets, and the use of mobile phones while driving have been much less effective. Despite a major campaign on drunk driving, the proportion of accidents in which drunkenness was a factor increased from 40.5 percent in 2001 to 41.1 percent in 2006.<sup>75</sup>

### Access to health care

*Improved access to health care has greatly contributed to human security.*

The past decade has seen a remarkable expansion in health insurance. The Universal Health Care (UHC) system, rolled out over 2001-2, covers over 48 million people, while another 6 million are covered as government or state enterprise employees and their families, and 9 million as private employees under the social security scheme. In all, around 97 percent of the population is covered. Half of those people covered by the UHC scheme are in the lowest two income quintiles.

**Figure 2.24 Motor accident death and injury, 1998-2007**



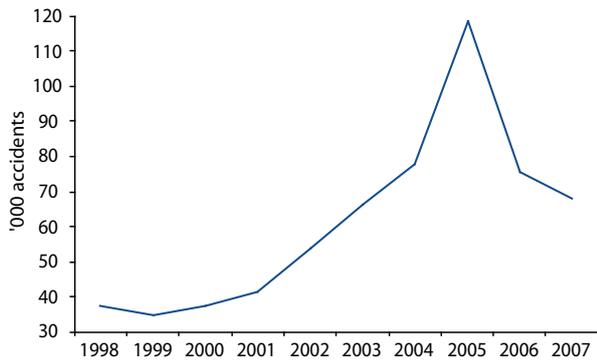
Source: Royal Thai Police Information Centre

<sup>73</sup> MOPH, "Thailand's Pandemic Preparedness and Response," powerpoint 6 october 2009. [http://beid.ddc.moph.go.th/index.php?option=com\\_content&task=view&id=21102716Itemid=242](http://beid.ddc.moph.go.th/index.php?option=com_content&task=view&id=21102716Itemid=242), accessed 10 November 2009

<sup>74</sup> World Health Organization, *Global Status Report on Road Safety*, 2009, [www.who.int/violence\\_injury\\_prevention/road\\_safety\\_status/2009/en/](http://www.who.int/violence_injury_prevention/road_safety_status/2009/en/)

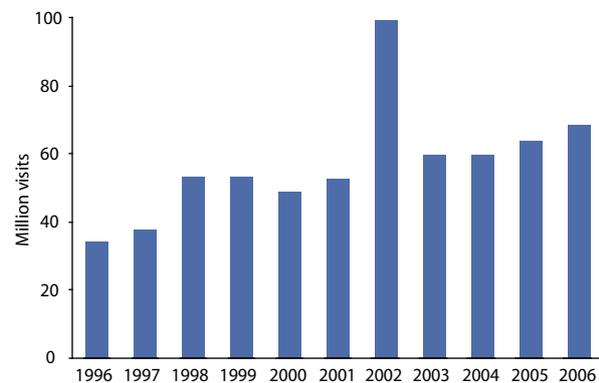
<sup>75</sup> Suwit Wibulpolprasert, ed., *Thailand Health Profile 2005-2007*, Nonthaburi: Bureau of Policy and Strategy, MOPH, pp. 145-7 (T).

**Figure 2.25 Motorcycle accidents, 1998-2007**



Source: Royal Thai Police Information Centre

**Figure 2.26 Number of outpatient visits at public hospitals, 1996-2006**



Source: TDRI 2007

Earlier government schemes had theoretically provided free health care for those who could not afford it, but these schemes suffered difficulties over targeting, stigma, and differential standards of service. The UHC scheme has made health services more accessible, as shown by the increase in visits to hospitals and clinics. In the first year of the UHC's operation, the number of outpatient visits jumped from 53 million to 99 million (see Figure 2.26). The number subsequently fell but remained higher than before the scheme, especially in poorer areas.<sup>76</sup> In 2007, there were 3.8 million hospital admissions of which 2.4 million were covered by the UHC, and another 1 million by other insurance schemes.<sup>77</sup>

In the past, expense was a major barrier in access to health care. In 2000, 31 percent of households reported that they faced difficulty meeting medical expenses. By 2004, the proportion had fallen to 15 percent. Similarly the number of households that faced bankruptcy due to medical expenses dropped from 12 to 3 percent over the same period.<sup>78</sup>

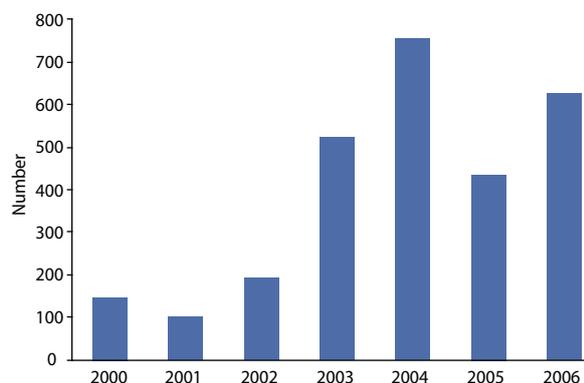
But the UHC is not without risk. The network of government hospitals exists alongside private hospitals and clinics. The provision of private health care has attracted large investments over the past decade. Government has promoted medical tourism to earn foreign exchange. The private and public health systems compete for the same personnel who are in limited supply (see Box 2.6).

In 2005, 21.6 percent of physicians were employed by private hospitals. Many others have their primary

employment in the public health system but also work after-hours in private hospitals and clinics. For some this is a way to combine public service duty with high earnings.

In recent years, a growing workload from increased patient visits under the UHC, coupled with a new liability to malpractice litigation, has induced many physicians to transfer from the public to the private sector where they can draw high salaries to compensate for their professional risks. This migration was not new, but increased after the launch of the UHC (see Figure 2.27). The "health personnel crisis" is now a top concern within the health sector.

**Figure 2.27 Net loss of physicians per year from public health sector, 2000-2006**



Source: Bureau of Health Policy and Strategy, MOPH

<sup>76</sup> TDRI, *Estimating and Analyzing Impacts of the Universal Health Care Coverage*, Bangkok: TDRI, 2007, pp 17-8 (T).

<sup>77</sup> NSO, *Health and Welfare Survey 2007* (T). Another 420,000 were covered under the UHC scheme yet chose to pay themselves

<sup>78</sup> S. Limwattananon, V. Tangcharoensathien, and P. Prakongsai, "Catastrophic and Poverty Impacts of Health Payments: Results from National Household Surveys in Thailand", *WHO Bulletin*, 85(8), 2007, pp. 600-6.

Financing health services is also costly. The cost of the UHC scheme rose from 30.1 billion baht in 2002 to 82.7 billion in 2007. The health ministry's share of the total government budget has risen from 4.8 percent in 1990 to 8.3 percent in 2007.<sup>79</sup> Recently it has been decided to include renal replacement therapy and ART treatment for HIV/AIDS patients under the UHC. By one estimate these two items alone would respectively account for 12.2 and 19 percent of total health expenditure by 2020.<sup>80</sup>

Economic crises also weigh heavily on the UHC, as more people shift from private to public services. In March 2009, the National Health Insurance Office reported that 50,000 people a month were losing their access to social security benefits and turning to the UHC scheme.<sup>81</sup>

### Prevention

*Against this background of rising costs, attempts to reduce the demand for health services gains greater importance.*

#### *Voices from the project discussions*

"People do not understand that health depends 80 percent on themselves, not on the health services."

In the late 1990s, health activists campaigned for more attention to preventive health care. As a result, the Thai Health Promotion Foundation was created by decree in 2000. The Foundation has many unique features. It is constituted outside the regular bureaucracy and hence has great autonomy of operation. Under an Act passed in 2001, the Foundation is financed by a 2 percent surcharge on the excise taxes on alcohol and tobacco.<sup>82</sup> The objective of the Foundation is to reduce sickness and death, and to improve the quality of life, particularly through self-help and self-reliance. Its primary focus is on campaigns to reduce smoking, alcohol abuse, and traffic accidents, but its overall range covers a variety of issues pertaining to physical, mental, social and spiritual health.

### Box 2.6 Health Personnel

Thailand has rather few health personnel. During 2000-6, there were 4 physicians per 10,000 population in Thailand, compared with 1 in Indonesia, 6 in Viet Nam, 12 in the Philippines, 15 in Singapore, and 16 in the Republic of Korea. (WHO, World Health Statistics 2008)

They are also unevenly distributed around the country. In Bangkok there was one doctor to every 850 people, but in the mountainous Loei province only one for every 14,159 people

### Conclusion: Progress with new risks

The vulnerability to HIV/AIDS has lessened somewhat owing to medical advances, public awareness, and social campaigns, but still remains. The rising health threats are diseases of lifestyle and environment – cancer, heart disease, stress – and international epidemics.

By international standards, Thai people are at high risk from motor accidents. Young male motorcyclists are the most imperilled. Public campaigns have failed to dent the rising trend of accidents. Abuse of alcohol is a major factor.

The Universal Health Care scheme has made a major difference in access to health care. But major challenges lie ahead in sustaining the scheme at affordable levels and retaining physicians.

The Thai Health Promotion Foundation hopes to make prevention a much larger element in health care.

Thailand faces a rapid transition to an ageing society, with many implications for health. These are considered in Chapter 3.

#### Key issues for improving health security

- Although trends in HIV/AIDS are cautiously positive, continued vigilance is needed to educate and protect at-risk groups.

<sup>79</sup> Suwit Wibulpolprasert, ed., *Thailand Health Profile 2005-2007*, Nonthaburi: Bureau of Policy and Strategy, MOPH, pp. 145-7 (T).

<sup>80</sup> V. Kasemsap, P. Prakongsai and V. Tangcharoensathien, "Budget Impact Analysis of a Policy on Universal Access to RRT under Universal Coverage in Thailand" in V. Tangcharoensathien et al., *Universal Access to Renal Replacement Therapy in Thailand: A Policy Analysis*, Nonthaburi, International Health Policy Program, 2005; and A. Revenga et al., *The Economics of Effective AIDS Treatment Evaluating Policy Options for Thailand*, Washington D.C.: The World Bank, 2006.

<sup>81</sup> *Krungthep Thurakit*, 21 March 2009 (T).

<sup>82</sup> [http://en.thaihealth.or.th/index.php?option=com\\_content&task=view&id=13&Itemid=28](http://en.thaihealth.or.th/index.php?option=com_content&task=view&id=13&Itemid=28), accessed 12 June 2009.

- More preventive measures are needed to combat the rise in diseases of environment and lifestyle.
- Current campaigns to reduce death and injury from motor accidents have been partially successful. Stronger measures are required, particularly on drunk driving.
- Financing the Universal Health Care system will become increasingly burdensome. Care is needed to ensure that the system remains financially sound and sustainable.

## PERSONAL SECURITY

Personal security means protection against violence and the deprivation of basic freedoms. People may be threatened by violence in many different ways. In the simplest form they may be the victims of crime, terrorism, war, or other direct forms of violence. In other instances, they may be subject to indirect or structural violence that acts as coercion, or restriction on their opportunities and basic freedoms

### Crime

*Thai people run a relatively high risk of being victims of crime, especially violent crimes against the person.*

The rates of crime, and especially of violent crime, are rather high when set against worldwide comparisons.<sup>83</sup> For murders, Thailand ranks 8th highest among 49 countries. Most of the countries with a higher rate are either narco-states (Colombia has the highest rate) or states undergoing political transition. The next-ranked in Asia is Malaysia with under one third of the murder rate of Thailand.

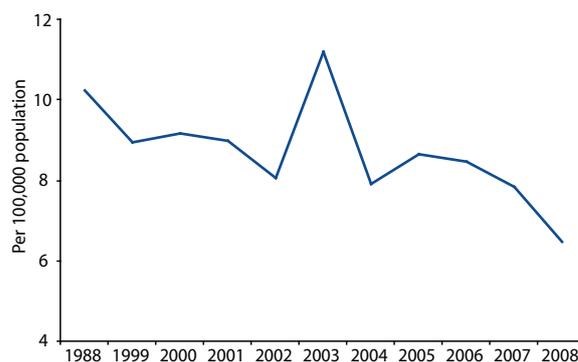
For murders involving firearms, Thailand ranks 3rd among 36 countries. For rapes, Thailand also comes in rather high at 14th among 50 countries. Thailand's rate is more than triple the rate of both Malaysia and Indonesia. For assaults, Thailand ranks 25th among 49 countries.

For crimes against property, the rates in Thailand come in rather lower on international rankings. For burglaries, Thailand ranks 37th among 68 countries, with Malaysia slightly higher.

On trend, reported crimes against life have tended to decline over the last decade from around 10 per 100,000 per year to around 6 per 100,000 per year (see Figure 2.28). By contrast, crimes against the person climbed steeply in the late 1990s and early 2000s from around 35 per 100,000 a year to around 58 per 100,000 a year, and thereafter declined (see Figure 2.29). Crimes against property have tended to fluctuate around 140 per 100,000 per year (see Figure 2.30).

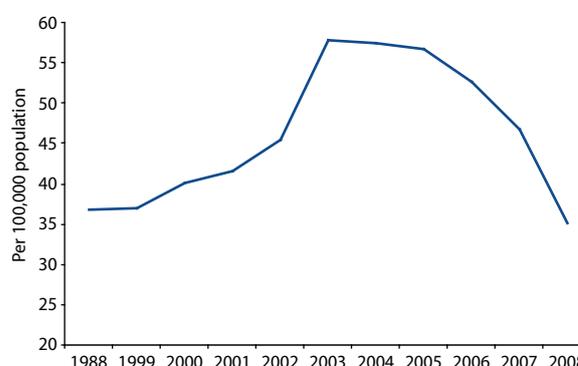
By contrast, the suicide rate in Thailand is rather low by international comparison – 8.2 per 100,000

**Figure 2.28 Crimes against life, 1988-2008**



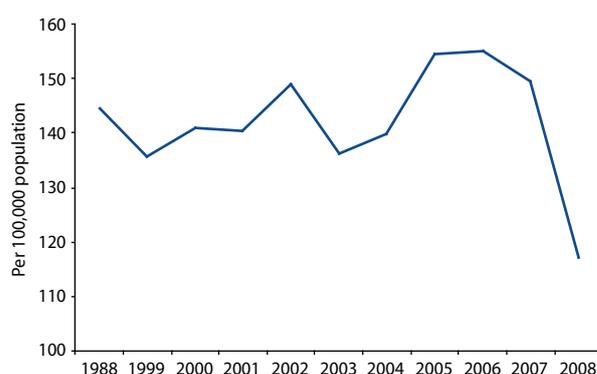
Source: Royal Thai Police Information Centre

**Figure 2.29 Crimes against the person, 1988-2008**



Source: Royal Thai Police Information Centre

**Figure 2.30 Crimes of property, 1988-2008**



Source: Royal Thai Police Information Centre

compared to 10.2 for Southeast Asia and 12.7 for the world in 2000.<sup>84</sup> This national average, however, obscures a high regional difference. In the north, rates are high, rising above 20 per 100,000 in some years. In Bangkok and in the far south, the rate is usually below 2. There is no convincing explanation for this variation.

<sup>83</sup> Data for international comparisons from [www.nationmaster.com](http://www.nationmaster.com), accessed 24 May 2009.

<sup>84</sup> Etienne G. Krug et al., ed., *World Report on Violence and Health*, Geneva: World Health Organization, 2002, pp. 278-9. The national average in 2001 was 5.96 per 100,000.

## Landmines

*Thailand has recognized the risk of remaining landmines. Unfortunately, some obstacles, e.g. insufficient resources and technical assistance, impede Thailand from eradicating all of remaining landmines.*

Mine areas in Thailand are mostly along the borders with its neighbours. After becoming the State party to the Mine Ban Convention in 1997, Thailand conducted the Landmine Impact Survey (LIS) from May 2000 – June 2001. The survey found that there had been 3,500 casualties; the total estimation of mine-contaminated area is 2,557 sq. km. in 530 communities<sup>85</sup> (297 along the Cambodia

border, 139 on the Burmese border, 90 on the Lao PDR border).

People near the borders are still at risk, especially hunters and soldiers. So too are animals, especially elephants. In recent years some Thai veterinarians have led the world in developing prosthetic limbs for elephants harmed by landmines.

## Violence in the Far south

For the past six years, in three provinces of the far south, people have faced the risk of death or injury from acts of violence in the course of their daily lives.

### Box 2.7 The human impact

The team working on this report held a discussion with officials and representatives of civil society in Pattani. Those attending were invited to talk about their feelings of insecurity. Their views cannot be taken as representative or balanced, but deserve repetition as expressions of concern.

The discussants noted that, despite thousands of seminars and workshops, there were still conflicting definitions of security, and this conflict remained a source of discord. They also cited sincerity as a prerequisite for bringing peace to the area. They felt that state authorities failed to understand that a sense of injustice and discrimination underlay the trouble.

They stressed that it is important for all government agencies to work together on this problem. Otherwise, only ad hoc measures are implemented. Further, the government should implement measures to truly help the people, not simply to placate them. Provincial development strategy should provide a good starting point for development rethinking and for genuine participation.

There are strong feelings about government schemes to aid the victims of the violence. Three years ago, government launched a rapid job creation scheme: when someone is killed, government will pay 4,500 baht/month to another member of the family to work in the public or private sector. While the beneficiaries of the scheme are largely appreciative, there has been some jealousy among the employers, who do and do not benefit.

Families also point out that financial help is not the only form of assistance required. They need help with training and assistance to overcome the emotional trauma. Government agencies find it difficult to provide services because government manpower is draining away from the area. The Department of Mental Health has arranged for psychological services in every hospital, while the outreach programme to the rural areas is largely operated by the military's medical units due to security concerns. Research shows high levels of stress among those living in dangerous areas. Changes in government policies, particularly over rehabilitation measures, are one cause of stress. Education and drugs were singled out as key problems. Drug arrests have increased steeply. The problem is particularly acute among large families. Poverty was another reason for the proliferation of drugs. At present, rehabilitation is a one-shot event, without follow-up, resulting in a very high rate of repeat addiction.

<sup>85</sup> Request for an extension of the deadline for completing the destruction of anti-personnel mines in mine areas in accordance with Article 5, paragraph 1 of the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction by Kingdom of Thailand, submitted to the President of the 8th Meeting of the State Parties to the Convention, September 2008

*Voices from the project discussions*

"Human dignity is very important. Many parties contribute to the problem, but local people don't talk about it. The problem is not Islam."

"Grassroots people get on with their lives normally. Officials might see violence, but we've lived with it so long that it's normal. We still hope for peace some time, but it will probably take a long time."

"Without justice, there is no hope for peace."

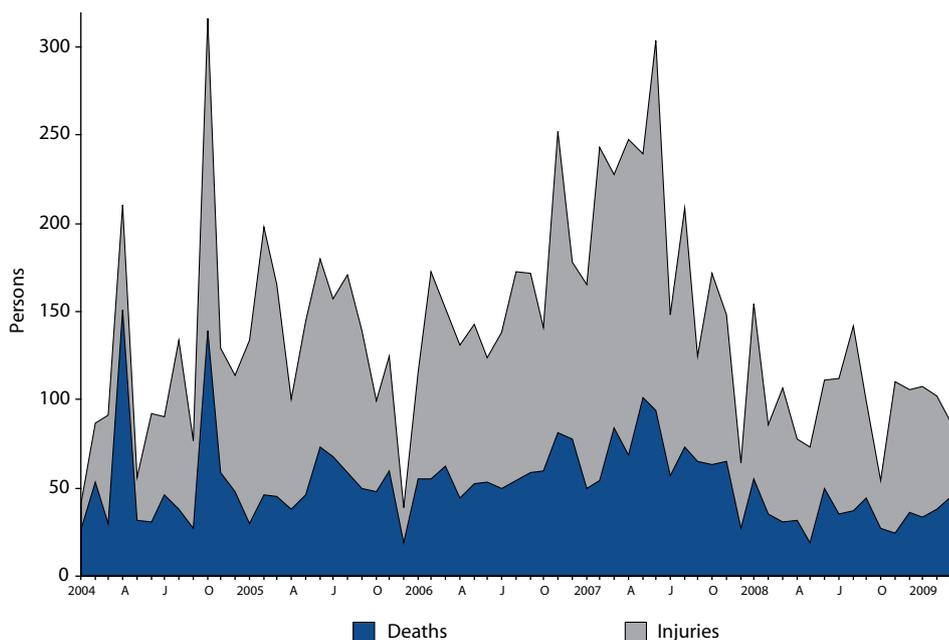
The three provinces of Pattani, Yala and Narathiwat have a majority population of Malay-speaking Muslims. The region has been intermittently troubled in the past. The latest phase of violence was prefigured by symbolic acts of defiance in the early 2000s, and began in earnest in January 2004. While in earlier phases the attacks were focused against government personnel and property, in this phase they have been almost exclusively targeted at people, making little distinction between official or civilian, Muslim or Buddhist. Aside from a handful of major clashes in 2004, almost all the violence has

resulted from assaults on individuals or small groups using small arms, small bombs and incendiary devices, and other weapons. Violence is an almost daily occurrence which local people have to live with (see Box 2.7).

Over the years 2004-8, there were 8,541 insurgency-related incidents, an average of 4.68 incidents a day. In total, 3,191 people died and 5,328 were injured, an average of 1.74 deaths and 2.92 injuries a day.<sup>86</sup> In all, 22 percent of the casualties were from the security forces, and another 8 percent were officials. The overwhelming 7-in-10 of the casualties were civilians. Four fifths of both the dead and injured were males. Among the deaths, Muslims narrowly outnumbered Buddhists, but among the injured, Buddhists outnumbered Muslims by two-to-one. In the largest number of cases, the victims were either at work or school at the time of the attack, or they were on their way there.<sup>87</sup> The frequency of incidents, deaths, and injuries peaked in early 2007, and showed a trend of decline through to the end of 2008, but revived somewhat in early 2009 (see Figure 2.31).

During fiscal years 2004-2008, 109,000 million baht was allocated to security and development activities in five provinces in the deep South. For fiscal years 2009-2012, 63 billion baht was earmarked under the Development Plan for the Special Area – Five Southern Border Provinces. It is the largest

**Figure 2.31 Violence in the far South, 2004-2009**



Source: Southern Region Surveillance Centre

<sup>86</sup> Data from the Southern Region Surveillance Centre.

<sup>87</sup> Data from the Centre for Health Development Administration of the Far South.

programme budget for the area, and the first that development activities are allocated more budget than security activities. A key issue is the implementation; to ensure that the local population truly benefit from the allocation.<sup>88</sup> There also remains an issue of people's participation in shaping their own destiny which invites an effective response.

## Drugs

*Drug use is now on the rise. In people's minds, drugs present a major risk for their families.*

From the late 1990s, there were great fears that more people, especially young people, ran the risk of becoming involved in drug usage because of the manufacture of cheap methamphetamine pills in Myanmar, and their distribution through pyramid selling networks inside Thailand. A survey in 2000 found that 16.4 percent of the population aged 12-65 had taken some drug within their lifetime, 4.3 percent in the past year, and 2.2 percent in the past month.<sup>89</sup> The most popular drug was methamphetamine, followed by marijuana and krathom (mitragyna speciosa, a mildly narcotic leaf). The number of methamphetamine pills seized rose from 15 million in 1997 to 96 million in 2002.<sup>90</sup>

After several other campaigns failed to stem rising usage, the government launched a "War on Drugs" in 2003, by setting local police and government officials targets for arrests and seizures. The campaign was widely criticized for incentivizing extrajudicial killing of suspects, including many innocent people,

planting of false evidence, and other infringements on rights and liberties.

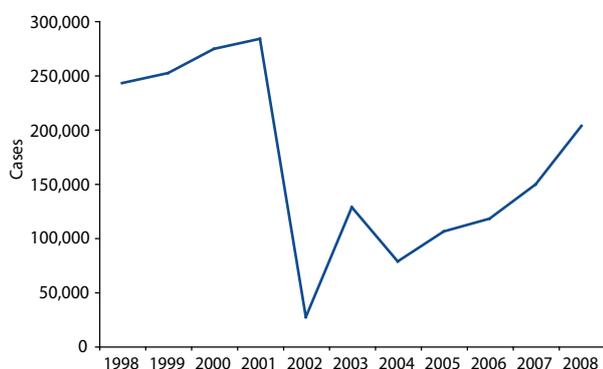
Yet after the campaign, the number of drug offences fell to around a third of the peak level (see Figure 2.32). In a survey conducted in 2007, 5.4 percent had taken drugs within their lifetime, 1.2 percent in the past year, and 0.7 percent in the past month.<sup>91</sup> These figures were much lower than those from the survey seven years earlier.

In the early 2000s, government began to treat drug addicts as patients rather than criminals, and to provide much larger budgets for treatment and rehabilitation. The group that is most at risk from drugs are males at the low end of the social scale. Among the 18,081 patients treated at one national rehabilitation centre over 2003-8, 41 percent were unemployed, and 35 percent worked as day labourers (see Table 2.4).

In recent years there are signs that the drug trade is reviving. After the 2003 campaign, the selling price of a methamphetamine tablet rose to 300-400 baht, but has since fallen to 100-120 baht. The number of drug crimes has been on the increase since 2005 (see Figure 2.32). The number of patients seeking treatment for drugs in public hospitals turned up sharply in 2008.<sup>92</sup>

A high proportion of offences committed by children and youth involve drugs, and a high proportion of drug offences involve children and youth, especially the children of unemployed persons, agricultural workers or former drug offenders.

**Figure 2.32 Number of drug crimes, 1998-2008**



Source: Royal Thai Police Information Centre

## Domestic and sexual violence

*Many women and children are at risk of sexual or domestic violence. The risks are especially large because this problem tends to lie hidden.*

Women and children are at risk from domestic violence. Women – and especially those under 18 – are at risk of sexual violence, abuse, and harassment. These problems are especially acute because of the cultural barriers against disclosure. The figures suggest that the problems are tending to get worse. State agencies have begun to become sensitive to the problem, but their responses remain tentative and inadequate.

<sup>88</sup> Pakorn Puengnet, "Caution: flagrant spending will play into the hands of the perpetrator", *Krungthep Thurakij*, 25 October 2009, p.2 (T)

<sup>89</sup> Khon Kaen University, Chiang Mai University, Prince of Songkhla University, Pibulsongkram Rajabhat Institute, Uttaradit Rajabhat Institute, Assumption University, Chulalongkorn University, Social Research Institute and Institute of Health Research. 2001. *Drugs and Substance Abuse Status 2001, National Household Survey, 2001* (T).

<sup>90</sup> Narcotics Control Board data cited in Suwit Wibulpolprasert, ed., *Thailand Health Profile 2005-2007*, Nonthaburi: Bureau of Health Policy and Strategy, MOPH 2007. p. 134 (T).

<sup>91</sup> *Ibid.*, p. 134.

<sup>92</sup> Data from the Office of the Narcotics Command Centre for Combating Drugs, [www.nccd.go.th/index.php?mod=content\\_list%&cate=375](http://www.nccd.go.th/index.php?mod=content_list%&cate=375)

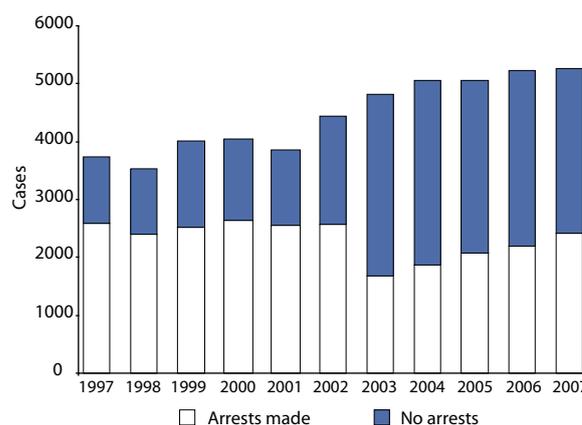
### Voices from the project discussions

“Children and youth are more and more at risk from drugs. The age profile is dropping. And the business is becoming more violent. There are more killings. Children all too easily fall victim in a very serious way.”

“The drug problem is not lessening. The traders are just getting cleverer. That’s why fewer people are getting caught and the statistics are going down. Arrests happen only when traders compete against one another and shop one another.”

“There’s no feeling that the drug business is wrong. The traders get richer, and so they are admired. Police and teachers cannot combat this. Those who have money are sought after by everybody. People sell drugs in order to be rich and admired and sought after.”

**Figure 2.33 Sex-related crimes, 1997-2007**



Source: Royal Thai Police Information Centre

were opened in all provinces, and began to provide systematic data from 2004 onwards (see Table 2.5). Over 2004-7, as the centres became better known, the total number of cases rose from 19 to 52 per day. The victims were roughly equally divided between women and children. The women suffered mostly from physical abuse, while the children were subject to sexual abuse.

### Scale of the problem

The true level of domestic violence is impossible to measure. A Thai proverb runs, “Don’t take family matters outside; don’t bring external matters into the family.” As a result, other family members will cover up violent behaviour, and victims are forced to endure silently, and are sometimes subject to repeated violence for many years.

Between 1999 and 2004, One-Stop Service Crisis Centres for women and children victims of violence

According to police data (see Figure 2.33), the number of sex-related crimes rose from 3,741 cases in 1997 to 5,269 in 2007. Less than half of these resulted in arrests. Over time, as the number of crimes has risen, the proportion of those resulting in arrest has shrunk.

Undoubtedly the official figures vastly underestimate the true magnitude of sexual violence. According to a 2006 survey, one-in-five women had a first sexual experience which was non-consensual.<sup>93</sup>

**Table 2.4 Drug patients at Thanyarak Institute, 2003-2008**

Occupation	2003	2004	2005	2006	2007	2008
Day labourers	851	1,348	1,654	1,400	1,122	460
Vendors	283	282	298	366	442	438
Civil servants	97	119	143	111	147	112
Students	237	67	62	25	48	44
Agriculture	110	108	134	87	101	51
Fishermen	1	3	1	5	2	3
Unemployed	1,601	1,273	1,496	1,390	1,606	2,225
Others	64	68	66	107	564	755
Unidentified	133	33	21	0	4	0
<b>Total</b>	<b>3,377</b>	<b>3,302</b>	<b>3,875</b>	<b>3,491</b>	<b>4,036</b>	<b>4,088</b>

Source: [www.thanyarak.go.th/thai4.5.5/index.php?option=com\\_content&task=view&id=506&Itemid=61&limit=1&limitstart=2](http://www.thanyarak.go.th/thai4.5.5/index.php?option=com_content&task=view&id=506&Itemid=61&limit=1&limitstart=2).

<sup>93</sup> Kritaya Archavanitkul, Churnrurai Kanchanachitra, and Wassana Im-em. 2008. ‘First Sexual Experiences for Thais... Consensual or Forced? Who Were the Partners? Condom Use?’ in *Population and Society 2008: Sexual dimensions in Population and Society*, edited by Kritaya Archavanitkul and Kanchana Tangcholapit, Nakhon Pathom: Population and Society Press, 2008 (T).

Another survey, found that 44 percent of women had been subject to sexual and/or physical violence while in a current or former relationship.<sup>94</sup> In most cases they had been forced to have sex against their will or in disagreeable ways. Almost all had followed the social norm of keeping such matters private, and had not revealed the experience to anyone. Many suffered psychological trauma and resorted to self-destructive behaviour such as heavy drinking, smoking or substance abuse.

**Who is involved?**

Many of the offenders are young. The number of offences committed by young offenders (aged 7-18) has risen from a thousand in 2001 to 3,500 in 2007 (see Figure 2.34). Again the real number of offences certainly far exceeds the arrests.

More details come from press reports on rape cases. One survey tracked 1,379 rape cases reported in the press over 2003-2007.<sup>95</sup> In almost all cases these were male-against-female assaults, while the rest were male-against-male (1.5 percent) and female-against male (0.3 percent). Most importantly, 58 percent of rape cases were committed against children under 18 years of age. In three-quarters of the cases, the perpetrator was one single person,

and in the rest the act was committed by a group. Many of the perpetrators were acquaintances or blood relations of the victims. In one-in-six cases, the victim was fatally injured.

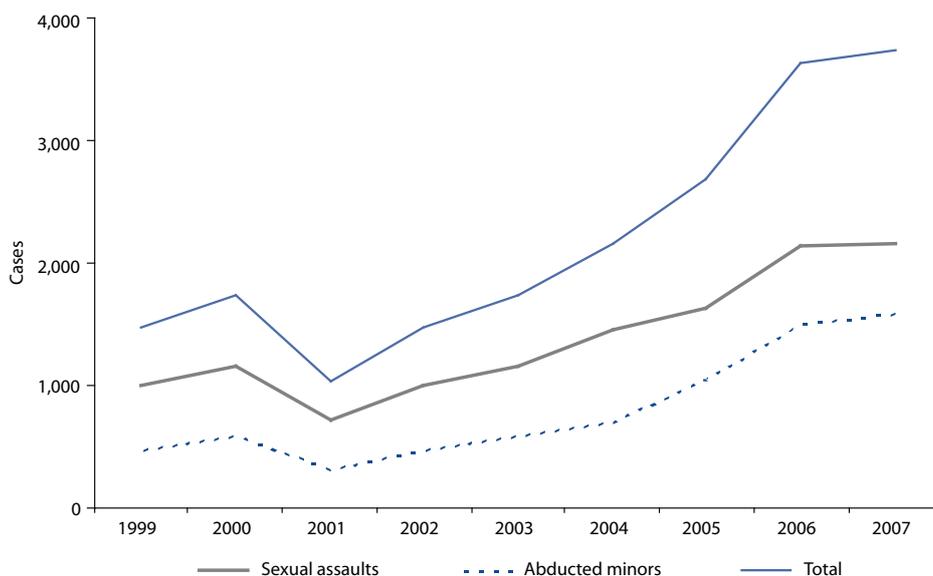
Other forms of domestic and sexual violence are only just coming into the public consciousness. Tracking of child abuse found 10 cases a day in 2005, and 14 a day in 2006.<sup>96</sup> Cases of sexual harassment are almost routinely suppressed, and only a small number are reported in the press, but the incidence is undoubtedly large.

In sum, domestic and private violence, especially with a sexual element, is prevalent, probably on the increase, largely involving minors as both victims and to a lesser extent as perpetrators, becoming marginally more public, yet still overwhelmingly hidden in conformity with social norms.

**Why such violence?**

At the root of the problem is a belief that domestic violence is the family's affair, and outsiders should not be involved. Women are both blamed and stigmatized for becoming victims of sexual abuse. As a result, victims are reluctant to either seek help or demand retribution.

**Figure 2.34 Youth (7-18 years) detained for sexual offences, 1999-2007**



Source: Royal Thai Police Information Centre

<sup>94</sup> Kritaya Archavanitkul et al., *Intimate Partner Violence and Women's Health*, Nakhon Pathom: Institute for Population and Social Research, Mahidol University, 2003 (T).

<sup>95</sup> Kritaya Archavanitkul, "Rape news summary 2003-2007", 2008 (T).

<sup>96</sup> *Matichon*, 29 December 2006 (T).

**Table 2.5 Clients of one-stop service crisis centres, 2004-2007**

Year	Number of hospitals	Total number of clients	Clients			Daily average
			Women	Boys	Girls	
2004	70	6,951	3,585	690	2,676	19
2005	109	11,542	5,656	792	5,094	32
2006	110	15,882	7,901	1,601	6,380	44
2007	297	19,068	9,470	1,826	7,772	52

Source : Department of Health Service Support, MOPH.

Recognizing the importance of the problem, government has begun to provide legal protection and services for victims of abuse. The Child Protection Act was passed in 2003. The Protection of Domestic Violence Victims Act, passed in 2007, gives importance to the protection of victims and the maintenance of the family, yet stipulates that witnesses to domestic violence have a duty to inform the authorities. The Criminal Code's articles on rape were updated. Both houses of parliament have committees working in this area. In 2009, three million people participated in the UNIFEM "Say No to Violence Against Women" campaign, the highest number of supporters in any country for this campaign.

But the legal provisions have yet to be effectively implemented. The personnel providing these services, and the media, need to be more sensitive about the special needs of the victims of such abuse, especially about the question of identity.

An additional reinforcement to domestic and private violence comes from the entertainment industry. Sexual violence – especially rape and physical violence against women – has an unnaturally prominent role in popular entertainment, especially television dramas, movies, online games, radio, print news, folk media, television commercials and cartoons. Although movies and television programming are subject to rating systems, these systems are not at all sensitive to the issue of violence. While a film that reveals an exposed breast or a monk smoking a cigarette will face heavy restrictions or bans; a film depicting a woman being raped or beaten will not.

Government has attempted to confront these problems. Several seminars and workshops have been conducted to make the authorities aware of the legal provisions, and to raise public awareness over these issues. The Office of Women's Affairs and Family Development held public hearings with stakeholders as input to a report on combating

domestic violence which will guide future policies and programmes.

### Human trafficking

*Awareness of human trafficking has increased but implementation of policy measures is still uneven.*

#### *Voices from the project discussions*

"Lots of girls enter sex work to make money to help their families, or to have a car and status and self pride. Often they ruin themselves for very little money. They are too easily preyed upon by the human traffickers. They see only the successes, the girls who come back with money, not the failures, the ones that suffer from HIV, abuse, debt. How can we make them see these negative role models?"

"The age of sex workers is getting younger. And there are more casual sex workers, working in entertainment outlets, doing it for fun. There are also girls from here who have gone south and come back with HIV, but they still keep working back in their home village. With the new drugs, there's no dark skin, falling hair, and wasting away, so people don't know."

"People here fall victim to human trafficking because of reticence. Those who have problems hide themselves away, and are not widely known."

Human trafficking is a modern form of slavery which has become a severe problem affecting not only Thailand but also the world community at large. Human trafficking includes forced prostitution, exploitative labour, forced begging, and abduction for illegal purposes.

Human trafficking in Thailand is most commonly associated with the sex industry but in fact takes many different forms including kidnapping or stealing children for beggary; luring or kidnapping people to work in sweat shops, fishing fleets, domestic service or agriculture; deceiving women into marriage with foreigners; and using the internet to exploit women's vulnerabilities for commercial gains.<sup>97</sup>

Thailand figures in human trafficking networks as a source, transit, and destination country. Among victims of human trafficking, women and children are the most vulnerable to exploitation.

Since the 1990s there has been a systematic trafficking of men and women into Thailand for both sex work and forced labour. The main sources are Myanmar (especially Akha and Thai Yai peoples), Cambodia, and Lao PDR.

Some of the foreign women and children transited in Thailand will be sent to third countries such as Malaysia, Singapore, Taiwan, the Philippines, Japan, Australia, South Africa, Bahrain, Europe, Canada and the United States.

Besides the trafficking of Thai women into the sex industry of several countries, there are also rackets moving unskilled labourers to Taiwan, Malaysia, South Korea, Singapore, Israel, and Middle Eastern countries. In both variants, the victims are lured by agents who advance money for travel and other costs. They then find it virtually impossible to pay off the resulting debt. Fifteen years ago, a Thai woman would have to pay 400,000-500,000 baht to go to Japan for sex work, but the rate now is 1.5 million baht.<sup>98</sup> The rate for semi-skilled placement in Taiwan has risen from 50,000-80,000 baht to 150,000 baht.

### Countering the traffickers

From the 1980s, NGOs have been involved in helping the victims of trafficking, including repatriating them back to their country of origin. Government became more sensitive to the issue in the 1990s, and adhered to the UN Convention Against Transnational Organized Crime in 2000. The Department of Social Development and Welfare set up 85 shelters for

women and children victims of trafficking. Collectively they accommodate around four hundred people each year, mostly from Cambodia, Lao PDR and Myanmar. Thailand also took a lead role in organizing regional efforts to combat trafficking, especially by setting up a National Secretariat on Trafficking in Women and Children in the Mekong Sub-region to coordinate with the United Nations, and by signing agreements with neighbouring countries on combating trafficking.

In 2001, the US launched an annual report on human trafficking which classified countries into three tiers: up-to-standard; watch list; black list. Thailand was initially ranked in Tier 2.

After slipping to Tier 2+ in 2003, Thai authorities responded quickly. In September 2003, human trafficking was placed on the national agenda. Cooperation was sought with NGOs. Victims of trafficking were henceforth to be treated as injured parties, not criminals. An annual budget of half a billion baht was ear-marked to support victims of trafficking, including the provision of adequate shelter for victims. In 2005 government set up the Centre for the Prevention and Suppression of Human Trafficking with responsibility to work at the international, national, and provincial levels, and to coordinate information and support. In 2008, the new Prevention and Suppression of Human Trafficking Act included measures against labour trafficking, and the provision of support and welfare protection to the victims. In recognition of these efforts, Thailand was restored to Tier 2 in 2005.

Implementation is still a problem. The 2008 act stipulates that victims should be granted temporary stay while the traffickers are prosecuted; during legal process they should be provided protection, support, treatment, and rehabilitation; after repatriation, efforts should be made to ensure rehabilitation continues. Next step is to eliminate all legal and institutional flaws that stand in the way of protecting the victims' rights and bringing the traffickers to justice. However, more efforts are required to achieve these goals.

<sup>97</sup> UNIAP, Executive Summary on "Overview of Human Trafficking in Thailand," presented in the Conference on Civil Society and Government Collaboration to Combat Trafficking in Persons in the Greater Mekong Sub-region, UN conference room, Bangkok, 30 June 2006; Jareewan Puttanurk, Chinethai Rucsachart, and Narat Somswasdi, *Human Trafficking: Feminist Perspective on Cyberspace, Legal Process and Government Agencies*, Women's Study Center, Faculty of Social Sciences, Chiang Mai University, 2007 (T)

<sup>98</sup> Siriporn Skrobaneek, Nattaya Boonpakdee, and Chutima Jantateero, *Kan ka ying: rue withi sangkom thai* (Women's Trafficking: Is it Thai society's way?). Bangkok: Foundation for Women (FFW), 1997, p. 82(T); unpublished documents of the Foundation for Women show the rate at 1.5 million baht after 2000.

### Conclusion: Crime, drugs, and domestic violence

Thailand has a relatively high crime rate, especially for crimes against the person.

Thailand's endeavour to clear remaining landmines is impeded by insufficient resources and technical assistance.

Violence in the South continues to have disastrous impacts on the livelihood of the people.

Drug use is now rising. The availability of cheap methamphetamine allows drugs to reach a wide market. Advances in rehabilitation and treatment have been significant, but attempts to disrupt the trade are ineffective, largely because it is so lucrative.

Domestic and sexual violence, disguised by a culture of non-exposure, are significant issues that require campaigns to raise public awareness.

Human trafficking is now a high-profile issue, and the subject of cooperation between neighbouring states.

There is a large number of people who suffer from severe personal insecurity. They are the non-citizens. Their situation is considered in Chapter 3.

### Key issues for improving personal security

- The police need to be more effective in combating the high rates of crimes against life and crimes against the person.
- Commitments to remove remaining landmines need to be fulfilled in a timely fashion.
- The six-year-long insurgency in the south needs to be tackled by both political and military methods.
- Action is needed to stem resurgence in the methamphetamine trade.
- More provision is needed for the victims of domestic and sexual violence. The police, judiciary and care personnel need to be more sensitive to the multiple traumas visited on victims. The entertainment industry should be invited to impose self-regulation or else be controlled by more severe methods.
- Thailand has recognized the importance of human trafficking, and has signed many agreements and protocols with neighbouring countries. Much progress has been made, but more efforts are still required.

## POLITICAL SECURITY

People have political security when they live in a state which is able to protect them from political violence including war, civil unrest, systematic torture and human rights violations including those committed by the state, the armed forces, and the police. Their political security is increased by having basic political rights including freedom of speech and association, and access to judicial institutions for redress. Political security is also enhanced by the ability to influence the actions of government through systems of representation, and through the existence of checks and balances on the abuse of power. Finally, political security is affected by the performance of state institutions, including their efficiency in making and implementing policy, their susceptibility to corruption and influence, and their ability to deliver justice.

### Political and civic rights

*Thai people have full political rights under the constitutional system, but risk not being able to activate those rights.*

#### *Voices from the project discussions*

*"Politics are creating divisions in society. The villagers can't keep up with national politics, but it still creates division among them at the local level."*

*"The use of violence to solve problems has arisen among all groups, including those with knowledge and those with property."*

*"Our governments change too often. It's difficult to get anything done."*

The Thai people acquired political rights in the first constitution of 1932 which stated that sovereignty belonged to the people, but which failed to catalogue rights in any more detail. The constitution of 1974, drafted after the overthrow of a military government, guaranteed civil, political, social, and cultural rights in line with international covenants of the time. A first comprehensive attempt to catalogue and guarantee the people's human, political and

civil rights was made in the constitution of 1997. Up to this point, all charters had been written by those in power at the time with no formal process of consultation. For the 1997 charter, a drafting assembly was created separate from the government and an extensive process of consultation undertaken. The charter enshrined not only basic human rights and community rights, but also civic rights including freedom of expression and communication, equality before the law, the right to peaceful assembly, the right of association and the right to form political parties.

In addition, the 1997 charter enshrined the rights of people to receive services from the state including education, the right to participate in processes of state decision-making that might affect their rights and liberties, and the right to sue government agencies. Article 63 explicitly outlawed any attempt to overthrow government or acquire government by force, and Article 65 enshrined the right of people to resist such an attempt.

The 2007 charter retains all these political rights, and defines them more precisely with more extensive wording, especially in terms of people's rights in the judicial process.

Under the 1997 and 2007 charters, Thai people are, in principle, guaranteed human and civic rights in accordance with international standards. However, the mechanisms for enforcing those rights are weak. While the rights under the constitution can be invoked in the courts, the practice varies, and there is much more room for making them directly enforceable in the judicial system. One recent example of a court which addresses a constitutional provision directly was the Map Ta Phut case where Section 67 of the current Constitution was invoked to support the claim of civil society groups to ensure public participation prior to decision-making on projects having major impacts on the environment and communities.

Interestingly the administrative courts which were established by the 1997 constitution have proved to be some of the most accessible courts from the angle of protection of human rights and remedies for victims. This was seen particularly in various cases concerning hill tribe communities whose Thai nationality had been revoked by some official sources. But it was the administrative court that ordered the restoration of Thai nationality to the affected groups.

## National Human Rights Commission

The National Human Rights Commission of Thailand was established in 1999. The 11-member independent body was assigned to review and report human rights violations by public and private actors. However, the Commission had no power to launch legal actions. During the first seven years, the commission received more than 4,565 petitions on human rights violations. Patients made up the biggest groups of petitioners (23 percent), followed by detainees or prisoners (18 percent), clients of public services (15 percent) and communities (13 percent). The right to justice was the most common cause of grievances (25 percent), followed by the rights to life and personal security (15 percent) and property rights (14 percent). All in all, 71 percent of the complaints were directed against government agencies or officials, especially against police officers.<sup>99</sup>

After this first Commission ended its term, many praised its work in promoting the principles of human rights and raising awareness in Thai society, but regretted that the Commission had been much less successful in enforcing any form of significant retribution against human rights violators, and blamed this on the Commission's inability to initiate legal process. The 2007 charter conferred on the Commission the right to submit cases to the Constitutional Court or Administrative Courts in instances where laws appear to be "detrimental to human rights." This innovation has not yet been tested.

In 2002, the Ministry of Justice created a Rights and Liberties Protection Department to provide support for people whose rights are violated. Its main activities are witness protection, legal counselling, financial assistance for insured persons and criminal suspects, and hearing petitions on various other matters.

## Political access

*People's access to national politics is put at risk by disruptions. Most social groups risk being under-represented in parliament. Political parties are weak.*

People acquired the right to directly elect members of a lower house of parliament in 1937. From the start, women had equal rights to the franchise as men. At this early stage, some members of the lower house were appointed. In 1946, the lower house was filled solely by election for the first time. Successive

**Table 2.6 Occupation of MPs, 2007**

Occupation	percent	
	MPs	population
"Politician"	40	
Business	26	3
Civil servant (incl. retired)	10	9
Lawyer/doctor/teacher	8	6
Agriculturist	11	42
Other	11	40

Source: Election Commission of Thailand, file mp50\_report.rar, downloaded 26 July 2008.

constitutions experimented with different formulas for filling an upper house, usually by appointment. Only in 1997 was the senate made fully elective, and this arrangement lasted for only ten years. Under the 2007 charter, roughly half the senators were again appointed.

The establishment of parliament as an effective and integral part of the country's political system has been constantly disrupted by military coups, especially in the early years. A slightly more settled phase began in 1979. The parliament enjoyed continued existence for twelve years, with four general elections, before being again interrupted by coup in 1991. Parliament was restored after a year, and survived for the following fourteen, through six general elections, before being interrupted by coup again in 2006 and restored a little over a year later.

Since 1988, new prime ministers have emerged by heading political parties that gained the largest number of seats in a general election. On two occasions, a different procedure operated. In both 1997 and 2009, a prime minister resigned or was removed in mid-term, some coalition parties split and changed allegiance, and the leader of another party became prime minister. Both these transitions happened at times of crisis. Both brought a leader of the Democrat Party to power.

## Representation

At the last general election (2007), 12 percent of MPs returned were female. This is the highest proportion ever attained, but still inadequate. The same imbalance is found in elections to local government. At this same election, two fifths of MPs returned their occupation as "politician" (see Table 2.6). In practice most of these are businesspeople. Possibly around two thirds of the MPs are business people, who

<sup>99</sup> Calculated by Kulapa Vajanasara and Kritaya Archavanitkul from the National Human Rights Commission's data on filed petitions.

make up only around 3 percent of the working population. By contrast, only 11 percent of MPs return themselves as agriculturists, who make up around two fifths of the population.

The dominance of parliament by business people has existed for many years. Probably it is a function of

several factors: the high cost of winning an election owing to the failure to impose restraints on campaign expenses; the incentive to enter parliament in order to gain access to business opportunities; and some tendency on the part of electors to choose rich and successful candidates in the belief they will be effective representatives

### Box 2.8 The legitimacy of elections

In recent years, a fierce debate has arisen over electoral legitimacy. Allegedly large sums of money, far in excess of limits imposed by the Election Law, are spent at elections, often in direct payments to voters. The 1997 charter created an Election Commission with power to order re-runs or disqualify successful candidates on grounds of malpractice. At the 2001 election, the Election Commission demanded re-runs in 62 of the 400 constituency seats. Yet at the next election in 2005, a new Election Commission demanded only two re-runs. The commissioners were criticized for negligence.

In 2006, a general election was annulled on grounds that several procedures had been incorrectly followed. Subsequently, executives of a political party were convicted of malpractice in connection with the election, and the Constitutional Court ordered the party dissolved. In 2008, after the executives of three political parties were found guilty of fraud in the course of seeking their own election, the three parties were also dissolved. These judgments interpreted the malpractice as amounting to attempt "to overthrow the democratic regime of government," and enforced a provision of the Political Parties Act which makes the party liable for the actions of its executives. The four party dissolutions resulted in 220 party executives being banned for 5 years.

These judgments have created fierce controversy. One side argues that harsh penalties are needed to prevent persistent electoral malpractice, especially vote-buying which results in elections not reflecting voters' true preferences. The other side argues that these judgments infringe on the rights of electors. Several million electors have seen the candidates they chose removed from parliament because of offences committed by other people.

Since 2007, four political parties have been dissolved for malpractice, and 220 of their executives have been banned from politics for five years. This has stimulated a fierce debate over the roles of elections and the judiciary (see Box 2.8).

### Political parties

The Democrat Party has been organized as a mass party with membership and branches for over 20 years. Other parties are ad hoc electoral machines for a particular political leader. One party boasted of recruiting over 15 million members, but the members had no active role, and the membership list served solely as a database for electoral campaigning.<sup>100</sup> Some MPs and candidates adhere to their parties because of admiration or other attachment to the party leader. But for others the membership is more contractual. They expect to be paid for their continued loyalty. They can be persuaded to switch parties for a transfer fee.

### Policy access

*Centralization of power makes access to policy mechanisms difficult.*

In the past, the Thai government was highly centralized, with power concentrated in the line ministries. Senior bureaucrats closely guarded the policy-making process. Over the past decades, bureaucrats have been obliged to share policymaking with elected politicians, but there are still limited avenues for ordinary people to have any influence over policy-making. Thai political parties do not act as channels for conveying popular opinion into the policy-making process. There is no formal system of lobbying. Personal connections are thus very important, but this channel is very narrow. Both politicians and bureaucrats have been reluctant to open up the process to public participation.

In the 1990s, civil society activists pressed for more participation in policy-making, with some success.

<sup>100</sup> Siripan Nogsuan Sawasdee, *Thai Political Parties in the Age of Reform*, Bangkok: Institute of Public Policy Studies, 2006.

**Table 2.7 Mainstream and alternative policy structures**

Policy area	Mainstream structure	Alternative structure
National economic and social development policy	Office of the National Economic and Social Development Board	National Economic and Social Development Advisory Council
Review of environmental impact assessments	Office of Natural Resources and Environmental Policy and Planning	Independent environmental organization indicated by the 1997 and subsequently the 2007 constitution
Community development	Community Development Department	Community Organizations Development Institute
	Sub-district Administrative Organizations	Community Organizations Council (mandated by the Community Organizations Act 2008)
Farmer development	Department of Agricultural Extension Bank of Agriculture and Agricultural Cooperatives	Farmers' Council (to be established as indicated by the 2007 Constitution)

In certain ministries, including health and interior, civil society groups gained access to policymaking processes. The eighth and ninth national development plans, begun in 1997 and 2002 respectively, were both compiled after a broad consultative process, and embraced the idea of participation. However, these plans are only indicative documents. The government that took power in 2001 was antagonistic towards this form of participation, and most of the mechanisms and structures that had evolved in the late 1990s withered in the early 2000s

Civil society became frustrated at the failure to gain access to existing structures and process, and over the past decade has instead concentrated on forming new channels and forums to supplement and counterbalance existing structures. Politicians and bureaucrats have proved more willing to accommodate this demand because it does not threaten their usual practices.

As a result, there are two parallel policy mechanisms – a mainstream mechanism dominated by politicians and technocrats, and an alternative mechanism in which NGOs and academics participate (see Table 2.7). However, these new bodies in the alternative mechanism are mandated only to “provide guidance, recommendations, comments” on the policies emerging from the mainstream route. As a result these new channels provide an outlet for opinion, but have limited influence on policy.

In the absence of better consultative mechanisms, the main way people can attempt to influence policy-making is through public campaigns. Several prominent campaigns appeared in the early 2000s including opposition to free trade agreements,

opposition to privatization of state enterprises, and support for measures to limit alcohol consumption. These campaigns are conducted by distributing information and raising public consciousness through the media and public events. To spread their message and put pressure on government, campaigners also find a common cause with broader protest coalitions, such as the People’s Alliance for Democracy which formed in 2006.

The formation of a pyramid of Administrative Courts for the first time under the 1997 Constitution provided a new avenue for challenging government on policy issues. A consumer protection NGO challenged the partial privatization of the Electricity Generating Authority of Thailand, one of the largest public enterprises, on grounds that the procedure had been incorrect and that public assets had been sold improperly. The Court ruled in their favour in March 2006.

### Decentralization

Until the late 1990s, central government strongly resisted any move towards decentralization of government. However, the 1997 “People’s Constitution,” the first charter compiled by a participatory process, laid down the principle that “the state shall give autonomy to the locality in accordance with the principle of self-government.” The Decentralization Act of 1999 implemented this principle two years later. Over the next few years, elected local bodies were formed at the provincial, sub-district and municipal level. According to the decentralization plan, 245 functions were to be transferred to local government along with 35 percent of the total government revenue within five years.

This plan was only partially successful. As of 2006, only 24 percent of revenue had been transferred, and only 180 functions. In 2009, the figure is estimated to rise to 25.25 percent.<sup>101</sup> In practice these figures over-state the actual transfer. For many of the 180 functions, line ministries have resisted any real transfer. The staff and budget remain attached to the ministries. A significant proportion of the budget nominally dispensed by local government is in the form of development projects transferred from the line ministries, and in practice the ministries retain control over the spending and oversight. In 2002, the Ministry of Interior set up a Department of Local Administration to “assist and support” the operation of local administrative organizations. The Auditor General acts as another form of supervision.

Out of 1.92 million public employees (excluding the armed forces and the police), 1.55 million work for the central and provincial administration. Only 368,844 work for local administrative bodies.<sup>102</sup>

The limited success of decentralization has been due in part to the reluctance of public servants, especially teachers, to be transferred under the control of local government. It may also be in part because the main unit for the decentralization scheme, the sub-district, is rather small. However, a major reason has been the reluctance of the central government, especially the agencies tasked with implementing the 1999 Act on the transfer of roles and budgets to local bodies.

## Corruption

*Many people feel there is a risk of government policies and actions being distorted as a result of corruption and the abuse of power.*

### *Voices from the project discussions*

“Corruption cannot be solved in this life because it comes from above.”

“Everybody sees it. Everybody knows it’s there. Nobody can cure it – from the local to the national level. It’s corrosion, cancer.”

On international survey of corruption, Thailand improved in the early 2000s, then lapsed again (see figure 2.35).

A 2000 nationwide survey found that petty gatekeeping corruption by low-level officials has greatly diminished, except among the police.<sup>103</sup> However, conspiracies between politicians, bureaucrats and businessmen to profit from the public budget, particularly through overpricing of capital spending, is endemic. On the largest public spending project of the past decade, the construction of Suvarnabhumi International Airport, the Auditor-General estimated that the leakage was around 20 percent.<sup>104</sup>

In recent years, the nature of political corruption has shifted. The most flagrant and profitable schemes in recent years use government power to increase the profits or value of private companies. This is difficult to detect and prevent, in part because the action may be technically legal even though it is unethical. Businesses which operate under government concessions are especially susceptible to this form of corruption as altering the rules and conditions of the concession can greatly affect the profit. This practice has been dubbed “policy corruption.”

The principal bodies for monitoring corruption are the Office of the Auditor-General, which scrutinizes budget spending, and the National Counter Corruption Commission (NCCC), first established under the 1997 constitution, which investigates charges against bureaucrats and politicians.

Over the past decade there has been difficulty maintaining the independence and effectiveness of both these bodies. Appointments of the auditor-general and members of the NCCC are made on the endorsement of the senate. An auditor-general was sacked on grounds the appointment was procedurally incorrect, but later reinstated. The full board of the NCCC was sacked for improperly awarding itself a pay rise.

The NCCC is impeded by a very high load of small-scale investigations. There are also fears it has been susceptible to political influence. Most would feel that the NCCC has achieved rather little in constraining or punishing corruption at the upper levels of government.

In practice, the detection and punishment of corruption depends critically on informal methods involving the media and civil society. A deputy health minister was sacked and eventually jailed for

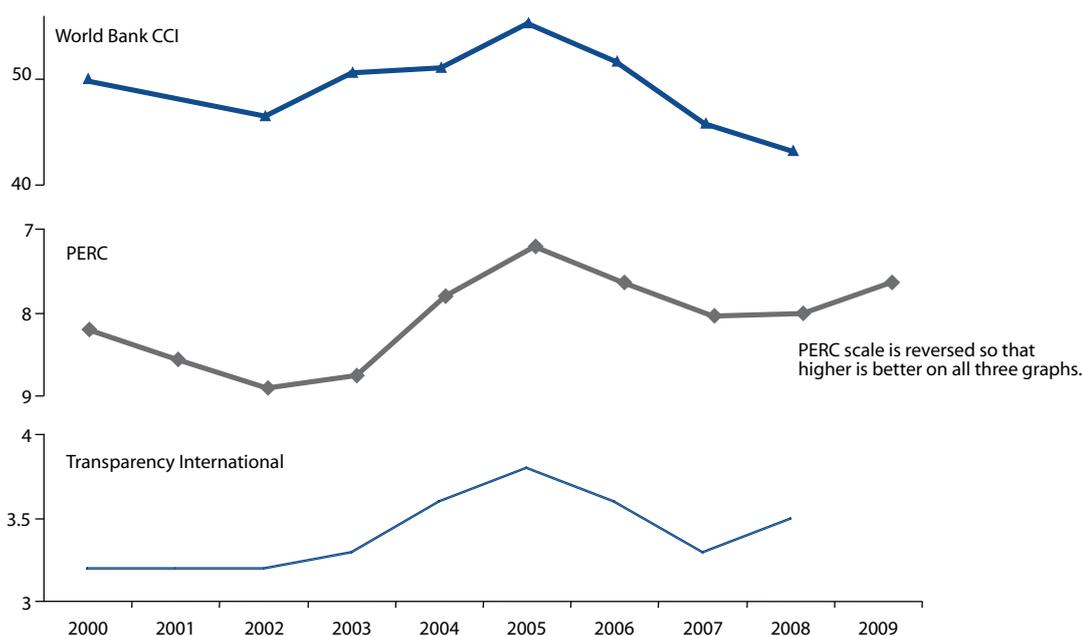
<sup>101</sup> Data from the Office of the Decentralization Committee, Office of the Prime Minister.

<sup>102</sup> Office of the Public Sector Development Commission, *Guidelines on Establishing Governmental Unit in the Provinces*, 2008 (T)

<sup>103</sup> Pasuk Phongpaichit et al., *Corruption in the Public Sector in Thailand Perceptions and Experience of Households*, Chulalongkorn University Political Economy Centre, 2000.

<sup>104</sup> *Bangkok Post*, 11 September 2005.

Figure 2.35 Corruption indices, 2000-2009



Source: TI, PERC, World Bank, websites

corruption only because an NGO pursued the case over several years, resisting obstruction by politicians and bureaucrats. Maintaining press freedom and providing protection for whistleblowers will improve the chances to constrain corruption.

## Judiciary and politics

*Is there some risk that the judicial system is becoming politicized?*

Until the very recent past, the judiciary played a very limited role in politics. Very few politicians have been brought to account by legal process. As a general rule, political “influence” has been mightier than the rule of law.

That has begun to change. Two major “influential” figures have been brought to account by criminal process. A “godfather” of the eastern region whose three sons are all in parliament or local government, was convicted on two accounts, one for corruption and the other for masterminding a murder. He fled into hiding before the judgments on the appeals. A former minister was convicted for massive corruption in a land deal related to a notorious waste treatment scheme. He also fled and was sentenced in absence.

In 2006 the judiciary played a particularly important role in nullifying a national election and this paved the way to key changes of government. In the

following year, it jailed members of the Election Commission, dissolved four parties and banned 220 of their executives for five years, froze a former prime minister’s assets, sentenced him to two years for abuse of power. Moreover, it sentenced his wife to three years for tax evasion, obliged the foreign minister to resign for violating the constitution, dismissed the health minister for an omission on his asset declaration, removed the house speaker for electoral fraud, and sacked another prime minister for earning petty amounts hosting a television cooking show.

This slew of rulings has generated controversy. All these judgments were against one former prime minister and his associates. They have raised the question of judiciary’s independence in a politically volatile context. They point especially to the retrospective application of new laws, introduction of a one-court subsystem, attention to the letter rather than spirit of the law, and failure to apply the same standards to other political figures. On the other side, enthusiasts have celebrated an advance in the rule of law, and argued that the former prime minister and his associates have suffered precisely because they persistently overrode the law to achieve their political ends. There is possibly some truth on both sides. An expanded role for the judiciary has the potential to control some of the wilder side of Thai politics, but there remains the issue of balance in a politically convoluted situation.

## Political violence

*Ordinary people are not at risk from external political conflicts, but are increasingly at risk from intensifying internal conflicts in which there is a growing role for violence.*

### Voices from the project discussions

*“The use of violence to solve problems has arisen among all groups, including those with knowledge and those with property.”*

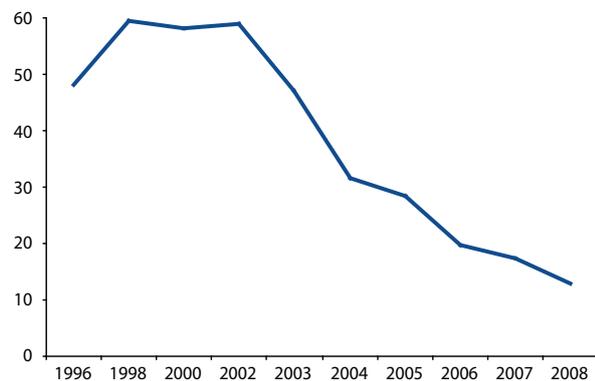
Over the past decade, Thailand has not been involved in any external war. Tensions on the borders occasionally claim lives, mostly of military personnel. In the early 2000s, there were several incidents on the Thai-Myanmar border, mostly arising from the drug trade. More recently there have been clashes on the Thai-Cambodian border arising from disputes over border demarcation. But the gravest concern is internally bred.

### Confronting political division

In Thailand, people’s political security has plunged dramatically over the past decade as a result of intensifying conflict. In 2006, the country suffered the first military coup for fourteen years. Coup-makers gave four reasons: corruption; overriding of constitutional checks and balances; lese majeste; and fermenting division in society. In reality, there were probably two main reasons. First, the overthrown government had excited extreme opposition and created great political tension. Second, the prime minister had interfered directly in army appointments. Elections fourteen months later installed a government not very different in political complexion from the one overthrown. The social divisions almost certainly widened as a result of the coup.

Over the following two-and-a-half years, an election was annulled, four political parties were disbanded, 220 politicians were placed under a five-year ban, one former prime minister went into exile, two governments were overthrown by court decisions within the space of a year, a 195-day demonstration disrupted the capital and sparked several violent incidents resulting in injuries and deaths, and an

**Figure 2.36 Thailand political stability index (World Bank) 1996-2008**



Source: World Bank, Worldwide Governance Indicators webpage

attempted insurrection was ended by bringing ten thousand troops into the capital. Two rival agitational movements have charged that the political system is defective and in need of fundamental reform.

Although Thailand’s recent political history has been rocked by crises at regular intervals, this latest phase has created more conflict and insecurity than at any time in the previous thirty years. In the late 1990s, Thailand seemed among the more politically secure countries of Southeast Asia with a functioning parliament, growing civil society, active and relatively free media, and an ongoing trajectory of reform. A decade later, that situation seems to belong to a lost golden age. The World Bank’s political stability index for Thailand dropped steeply from 59.1 in 1996 to 12.9 in 2008 (see Figure 2.36).<sup>105</sup>

### Street protest

There is an old tradition of protest groups coming to Bangkok to petition and put pressure on government. In the 1990s, several rural protest movements, grouped under the banner of the Assembly of the Poor, came to the capital several times, climaxing in a 99-day demonstration in 1996. These campaigns were peaceful, with no more violence than occasional scuffles with the police.

Since late 2005, street protests have become larger, longer, and marked by greater violence. One protest coalition held a series of rallies attracting over 100,000 people; set up a protest camp blocking a major Bangkok road for 195 days; declared a “General Uprising” and occupied the Government House, forcing ministers and officials to find other accommodation; and occupied both Bangkok’s

<sup>105</sup> The data on this index, and other Worldwide Governance Indicators, are available through <http://info.worldbank.org/governance/wgi/index.asp>. The Bank explains: “The aggregate indicators combine the views of a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. The individual data sources underlying the aggregate indicators are drawn from a diverse variety of survey institutes, think tanks, non-governmental organizations, and international organizations.”

### Box 2.9 Relocating conflict

The conflict began over the policies and actions of a government which created groups of passionate supporters and passionate critics.

Although adherence to one of these camps depended on many factors, underneath, there was a regional and social pattern. The former prime minister's opponents were concentrated in Bangkok and in the South, the most urbanized regions. They included activists and intellectuals, but also a broader middle class. The former prime minister's supporters were concentrated in the northeast and upper north, the most rural regions. They included the disadvantaged, including poor farmers and labour migrants, but also an emerging provincial middle class.

The former prime minister's opponents claimed a moral right to oppose and overthrow his government on grounds that he and his associates were corrupt, and their power was based on the distortion of the political system by money. The former prime minister's supporters claimed that the opposition was an attempt by the socially privileged to overthrow a leader that threatened the status quo.

The conflict resulted in both sides taking to the streets and attempting to overthrow the government of their opponents. Both sides also argued that the political system needed to be redrawn. One side wanted measures to neutralize the overwhelming role of money in politics and thus make politics more representative and responsive. The other side wanted to prevent interventions such as coups and background influence so that the principle of people's sovereignty and universal electoral representation could be allowed to work.

Although this conflict has created great political insecurity and caused great damage to Thailand's economy and international image, the two political movements that have emerged have raised important questions about the failings of Thailand's political system.

From an optimistic standpoint, these two political-social movements have the potential to transform Thai politics for the better. They represent real social interests. They have strong ideas. At present, their conflict is being played out on the street where it too easily falls prey to a violent fringe, ever present in street politics. This conflict should be played out within representative institutions. And if brought within that sphere, these political-social movements might overwhelm the commercialized politics that now hold sway.

airports, causing the authorities to close the facilities for a week on safety grounds.

A rival protest coalition forced the abandonment of a major ASEAN meeting in Pattaya, disrupted the capital's traffic by blocking major intersections, and fought pitched battles with troops sent to restore order. Both coalitions recruited teams of "guards," armed with makeshift weapons, and engaged in several skirmishes, resulting in deaths and injuries.

Although the intensity of this conflict has since subsided, these two movements have created a new tradition of street protest, with greater resort to violence (see Box 2.9).

### Resolving conflict

While the recent upsurge of tension and violence has some specific historical causes, it also results from a general failure of the political system to act

as a mechanism for resolving conflicts which are growing in number and variety as society becomes more prosperous and more complex. For the long term, the solution to rising conflict lies in improving the ability of the political system at all levels to resolve conflicts.

Throughout the critical period, opinion polls showed that a majority of people were opposed to the use of violence, and in support of peaceful methods of resolution. Some bodies offered to work as mediators. These voices went unheard. This problem of the disregarded majority is common to most democracies, but is arguably more critical in Thailand because of the limited access to the political system. Several reforms are necessary to tackle this problem at various levels from the national to the local.

Steps should be taken to improve the ability of political parties to function as channels for popular opinion. In the past, the development of the political

system through successive constitutions has concentrated heavily on the key state institutions (parliament, cabinet, courts, etc.). There has been less attention to political parties. With the partial exception of one example, all political parties are little oligarchies, dominated by a single leader and controlled by a small coterie. Future legislation on political parties should enforce the democratization of these bodies. Current law demands that parties acquire some minimal mass base. In the future, measures should be introduced to give all party members a say in the election of party officers and the selection of the party's programme. Perhaps most important of all, the selection of election candidates should be devolved onto constituency units.

Media, and especially electronic media, can play a larger role in acting as a channel for popular opinion. Thailand now has a public television channel which aspires to act in the public interest, and should shoulder this role. Other government-owned channels should allocate more airtime to public interest programming.

Many of those who participated in the street movements were members of activist groups that were attracted to join large protest coalitions because of their frustration with other methods of influencing government policies. Over the past few years, constitutions have introduced several new methods for people to exert influence on the policy process, but only at the downstream end. Often by the time an issue reaches this stage, the atmosphere is already confrontational. Public participation must start at the upstream end of the policy process and continue through the policy cycle. This is a gigantic but very important agenda as it involves the government, the bureaucracy and all public organizations. Most significant measures are the timely dissemination of relevant public information, and the promotion of balanced and deliberative dialogues on important policy issues.

Decentralization is another strategy to unclog the institutions at the national level and move decision making closer to the people affected. Thai local government is still in its early stages. Periodic review and structural adjustment is needed to ensure that the system and structure are relevant to changing development situations. The three-tier administrative system (central-provincial-local administration), which is largely centrally-driven at present, should become more locally-driven as local administrative units gain strength and competence. This will

require many changes. Local bodies must gain more independence. Their personnel must be upgraded to enable local administrative units to assume authorities and responsibilities transferred from various line agencies. People must have a larger role in auditing the management of local administrative units at all levels.

Community empowerment is also an important strategy to diminish conflict and enhance human security in other ways. A strong community can resolve local problems, and take measures to prevent and reduce human security risks in a timely manner. Community response constituted an important safety net during the 1997 crisis. Since then, there have been efforts to strengthen this informal system, but the progress has been slow. A strong community also constitutes a solid foundation for the strengthening of grassroots democracy.

### **Conclusion: Rising conflict, rising risks**

Over much of the past generation, most Thais would probably have judged that their political security was improving. Over the last five years, that judgment has almost certainly changed. Throughout the country, frustration with the practical operation of political systems is giving rise to rising levels of conflict.

Thais have had political rights formally guaranteed by a constitution since 1997. In practice, the embedding of democratic systems has been repeatedly disrupted by military coups.

The parliament is heavily dominated by male business people, a small fraction of the population, while most other groups are under-represented. Political parties do not serve as channels for people to affect policy-making. Decision-making remains highly centralized with limited opportunities for participation.

Corruption is perceived as a major barrier to efficient and responsive government. Decentralization has helped only partially in making government more accessible and responsive. Recently, the judiciary has taken a more active political role, but faces accusations of bias.

The accumulating frustration over the operation of political systems at all levels is creating a rising level of violence.

#### Key issues for improving political security

- Better mechanisms are needed to realize constitutional rights.
- Parliament does not yet deliver on its promise to represent the society in government, partly because representation is highly biased to certain groups, partly because parliament is often interrupted, and partly because channels of access to policy-making are inadequate. Constitutional and political reform must address these issues.
- Decentralization has been only a partial success, partly because of bureaucratic obstruction. These obstructions should be removed, or the overall approach to decentralization reviewed.
- Corruption remains a major problem, particularly at the higher levels of politics and the bureaucracy. Based on past experience, ensuring freedom of expression and space for monitoring by civil society are the most effective methods to counter such corruption.
- Care is needed to ensure that, with the backdrop of a politically sensitive situation, the enhanced role of the judiciary results in a stronger and more even-handed application of the rule of law.
- Efforts to counter the rise of political violence should focus on the role of parliament, decentralization, democratization of political parties, and community empowerment, checks and balances against the abuse of power.

## **TAILPIECE: A TIME OF TRANSITION**

Most Thais probably feel more secure than their parents did a generation ago.

Over the past generation in Thailand, many of the most severe threats to human security have abated, partly as a result of rising prosperity, partly as a result of efforts by official agencies and civil society. Poverty has diminished. Some major threatening diseases have retreated or stabilized. Access to water has improved. Attempts have been made to limit pollution. Social security has improved, especially in terms of health care. More people receive more education. There is greater recognition of the seriousness of problems such as human trafficking and domestic violence. Drug addicts are treated as patients rather than criminals. The administration has been decentralized. Human and civic rights have been coded and guaranteed in the constitution. Parliament has functioned for long periods. Petty corruption has diminished.

For many of the remaining issues, the problems are well-known, the legislation is in place, the institutions have been created, and the failure is

over implementation. More effort is needed from the police to combat crime and prevent traffic accidents. Better monitoring and enforcement is required over food safety, pollution, and waste. Protocols on human trafficking need to become effective. The quality of education must be addressed. Laws and procedures for managing the environment should be implemented more sincerely. Campaigns are needed to address problems of domestic and sexual violence. Drug use must be countered more effectively. Parliament should be allowed to play its intended role as an arena for negotiating political conflicts

In all these matters, the solutions are known. It is a matter of allocating national resources to strengthen institutions and improve implementation.

At the same time, there is a growing unease over issues that have recently emerged or are growing in importance as a result of changes within Thailand or in the world at large. These are the big issues for human security in the near future, and they are the subject of the next chapter.

### 3. Emerging issues for a secure tomorrow

Thailand can be moderately proud of its record on economic development over the past generation. Real per capita incomes have tripled in 25 years, despite the country being at the centre of the Asian financial crisis of the late 1990s. Poverty has significantly declined.

In terms of human development, Thailand has also performed well. On the UNDP's Human Development Index, Thailand's rating has improved steadily over three decades (see Figure 3.1). Yet this trend has tended to flag in recent years (though this is also true of other countries in the region), and Thailand has slipped a few places in the rankings to 81st of 179 in 2008.

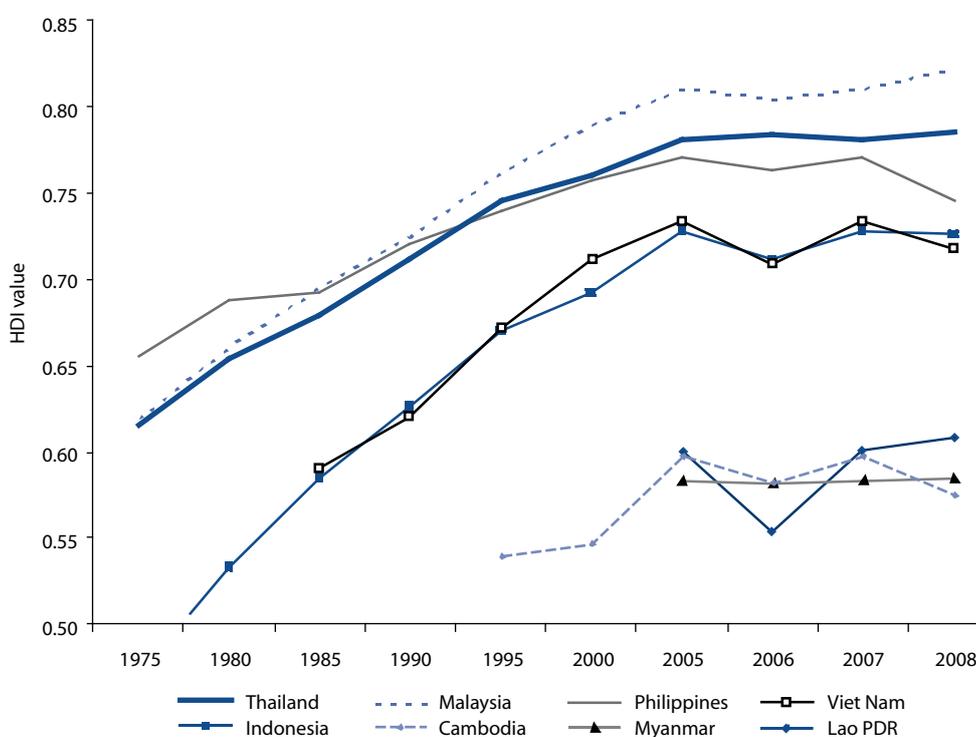
On the Millennium Development Goals, Thailand has achieved most of its targets well ahead of deadline (see Box 3.1).

Although there are still some significant problems in certain regions and among certain groups, by

and large the big problems now facing Thailand are not those of meeting basic needs. The emerging problems are the result of the country's relative success at becoming a semi-industrialized country in a globalized world.

This chapter highlights five human security issues which are all in different ways a product of this transition. The first issue is water which, as a result of population growth and urbanization, is becoming a problem in terms of both quality and quantity. The second is the fate of the smallholder farming sector which faces multiple threats yet still plays a major role in livelihoods. The third is the existence of a large number of "non-citizens," who face insecure lives, and are beginning to breed feelings of insecurity in the host community. The fourth is the persistence of income inequality which underlies growing social and political conflict. The fifth is the rapid transition to an ageing society as a result of a demographic transition associated with prosperity and urbanization.

**Figure 3.1 Human Development Index trends, Southeast Asia, 1975-2008**



Source: UNDP, Human Development Report 2007/2008, Indicators Table 2.; and HDI webpage

### Box 3.1 Thailand's record on the Millennium Development Goals

- 1: Halve, between 1990 and 2015, the proportion of people living in extreme poverty. Achieved.
- 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger. Achieved.
- 3: Ensure that, by 2015, boys and girls alike, will be able to complete a full course of primary schooling. Highly likely.
- 4: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015. Already achieved.
- 5: Reduce by two thirds, between 1990 and 2015, the under-five mortality rate. Still problems in remote areas.
- 6: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio. Target not applicable.
- 7: Have halted by 2015 and begun to reverse the spread of HIV/AIDS. Achieved.
- 8: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases. Achieved for malaria, potentially achievable for tuberculosis.
- 9: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources. Potentially achievable.
- 10: Halve by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation. Achieved.
- 11: By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers (globally). Likely.

The major remaining difficulty concerns infant mortality in remote areas. In 2004, some more challenging MDG Plus goals were added on nutrition, education, gender representation in government and politics, health, and renewable energy.

None of these problems is unknown. Indeed, they are widely discussed. Yet none of these has the prominence on the national agenda that it deserves. All five issues pose multiple problems for human security in the present, and promise to aggravate in the future if they are not addressed.

Besides these five local issues, there is also the global issue of climate change. As already noted above, this is already affecting human security through more erratic patterns of flood and drought. In the future it will affect Thailand's human security in many more ways. We round off this chapter by sketching some key features of the impact of climate change on Thailand and their impact on human security.

These six issues will have a major impact on human security in Thailand in all its aspects in the years to come. They are big issues. It is far beyond the scope of a report such as this to suggest how they can be solved. The intention here is to flag these issues as

critical for human security, and to suggest ways in which Thai society might seek its own solutions.

## MANAGING WATER

*The quality of water available for household consumption is increasingly at risk because of pollution. The future availability of water is at risk because of rising competition among different uses.*

Water used to be a relatively free and abundant resource. It fell from the sky, flowed down the rivers, irrigated the fields. In Thai culture, water is a symbol of purity. Over the past generation, it has become an increasingly scarce resource, subject to increasingly fierce competition, and under threat from contamination of many different kinds. It is becoming a major issue in relations with neighbouring countries. These problems will soon intensify under the impact of climate change.

## Water supply

For its water supply, Thailand depends almost totally on the rain which falls on the country itself. The Mekong, which carries the melt of Himalayan snows, rims the border for some distance in the north and northeast, and benefits only a limited area. The remaining areas are supplied by rainwater that is either collected directly, flowing down the waterways, or stored as groundwater.

Luckily, nature is generous. The average annual rainfall is in the range of 1,200 to 1,600 millimetres per year, and the total annual rainfall deposit on the country is around 800 billion cubic metres. Roughly a quarter of this is captured as surface water and runoff, giving a supply of 3,000 cubic meters per head per year, comfortably above the UN standard, but significantly below the levels of neighbouring countries.<sup>106</sup>

But the rainfall is not evenly distributed across the country, through the year, or across years. The fall is heavily concentrated in a few monsoon months meaning that the supplies need to be stored in groundwater, reservoirs, or local storage systems. The northeast is the most disadvantaged area. The region lies in rain shadow and has an average rainfall that is a quarter below the national average.<sup>107</sup> Also, most of the land in this region is rolling or sloping (only 8 percent is fertile low land), and the sandy soils do not hold moisture, so surface water supplies are far lower than elsewhere.

## Water quality

### Household consumption

Over the past decade, the supply of household consumption water has improved notably. In 1996, 81 percent of households had an adequate supply, while by 2005 the figure had improved to 97 percent, with only the northeast region lagging at 92 percent.<sup>108</sup>

While quantity is adequate, quality is still a problem. Only a little over a fifth of households are supplied by piped tap water. In the urban areas, households mainly use bottled water, while in the rural areas

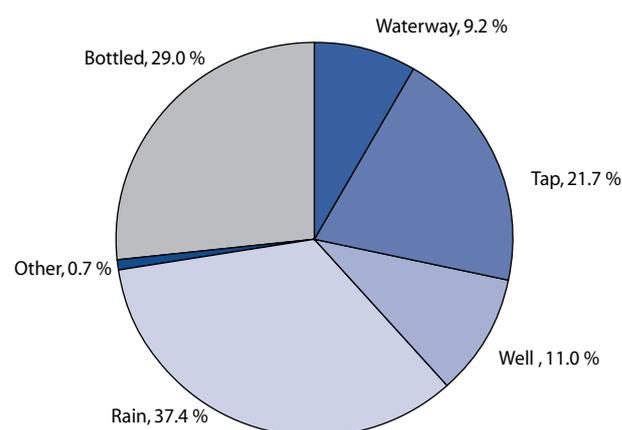
### Voices from the project discussions

“There is a lot of pollution in the river [Maeklong]. Some comes from dyeing factories, some from chemical factories, and some from orchards and farms. The people most affected are the fishermen, especially the small-scale ones, and those with shellfish farms. Government agencies are hopeless. The budget comes but nothing happens.”

“Government says it supports organic fertilizer. But to get a loan from the government’s agricultural bank, you’re forced to prove you use chemical fertilizer. The chemicals get washed down into the waterways.”

households mainly use stored rainwater (see Figure 3.2). In checks made by the Department of Health in 2004-5, the proportion of samples that failed their safety standard was 38 to 40 percent for piped water, 87 to 93 percent for rainwater, 46 to 80 percent for groundwater, and 85 to 100 percent for shallow wells. Checks on bottled water found 29 percent failed the safety standard.<sup>109</sup>

**Figure 3.2 Sources of household consumption water, 2005**



Source: NSO, Survey of Population Change, 2005-2006

<sup>106</sup> Data from World Resources Institute database.

<sup>107</sup> ONEP, *Thailand State of Environment Report 2002*, p. 88 (T).

<sup>108</sup> Food and Water Sanitation Division, Department of Health, MOPH.

<sup>109</sup> Department of Health, *An Assessment of Sanitation and Safety of Household Consumption Water, 2007* (T).

## Surface and groundwater

The Pollution Control Department (PCD) of monitoring of surface water sources found that the proportion of poor or very poor quality ranged between a fifth and two fifths in various years.<sup>110</sup>

Groundwater in some areas is not of good quality. The reasons for the poor quality of groundwater are varied. In some areas, particularly where the bedrock is limestone, there are naturally high levels of iron and fluoride. Seepage of agricultural chemicals is also a growing threat in rural areas, and leakage from industries and waste disposal in urban areas.<sup>111</sup> In places, groundwater is polluted by mining operations which introduce salinity or heavy metals into the water table (see Box 3.2).

Rainwater runs the risk of contamination by bacteria due to poor storage conditions, but this has been a target of government campaigns in the past, and until recently rainwater was generally considered safe. However, more recently the quality in some areas is threatened by air pollution, especially near the capital and in other major urban areas.

Waterways are prey to increasing levels of pollution from domestic, industrial, and agricultural discharges. The major culprit is the rising volume of untreated domestic wastewater. The lower reaches of the Chao Phraya, Bang Pakong, MaeKlong, and Tha Chin rivers are especially affected with low levels of dissolved oxygen and high levels of coliform bacteria. Although some stretches of some rivers have improved through local efforts, overall the quality of river water is in decline.<sup>112</sup> In Thailand's most intensive industrial zone on the Eastern Seaboard, the issue of water allocation has become a matter of dispute between local communities and industrial plants (see Box 3.3).

Government has invested heavily in plants to treat domestic waste water. At present 79 plants are operating and another 5 are under construction. Yet around three quarters of all domestic discharge is still untreated. The capacity of the plants is still less than half of the total demand. Many of the plants are badly maintained and work inefficiently.<sup>113</sup>

<sup>110</sup> Pollution Control Department, *Thailand State of Pollution Report 2007*, (T).

<sup>111</sup> Provincial Waterworks Authority, [http://www.pwa.co.th/document/performance\\_water.htm](http://www.pwa.co.th/document/performance_water.htm), accessed November 2008.

<sup>112</sup> Somrudee Nicro and Matthew Markopoulos, *Environmental Security in Thailand, Bangkok: Thailand Environment Institute*, 2009, pp. 55–9.

<sup>113</sup> *Ibid.*, pp. 65–6.

<sup>114</sup> <http://www.thaipost.net>, 12 April 2009, accessed 14 February 2010

### Box 3.2 Klity Creek

A small creek in Kanchanaburi has become a symbol of industrial pollution, and a test case for the “polluter pays” principle enshrined in the 1992 environment act.

In the early 1980s, a lead mine began operation, and tipped its waste into a creek used by a community of Karen villagers. Before long the villagers were suffering from strange aches and swellings, and their cattle were dying. In 1998, health officials inspected the creek, and found the lead contamination far exceeded safety levels. It closed down the mine, but imposed a fine of a risible one thousand baht.

Later health checks found that villagers had high levels of lead and tin in their blood. Many fell sick. Birth defects began to appear. The Karen community insisted that the company or the government clear up the pollution, but both refused. The PCD argued that the environment would cleanse itself by natural processes. In frustration, eight villagers sued the company for compensation under the 1992 environment act.

In 2006, the provincial court ruled in favour of the villagers, but awarded only a paltry 4 million baht in compensation. The villagers' case was not helped by the fact that health officials refused to certify that sickness suffered by the villagers could be traced to the mine's contamination. After an appeal in 2008, the compensation was raised to almost 30 million baht. In addition the villagers sued the PCD for negligence, but again won only a pittance in damages, and still had no undertaking to clean up the mess. Over 10,000 tons of lead residue is still lying around the area. Another case, in which 151 villagers are suing the company for a billion baht in compensation, is still in process.

In 2008, the PCD and the MoPH tested the soil and freshwater fish in the creek, as well as the children's blood, and found lead many times higher than the minimum safety level.<sup>114</sup>

Over two decades have passed since the pollution was created, the creek is still polluted, the local community is still at risk, and the compensation won is paltry. If the “polluter pays” principle is to be effective in safeguarding both people and natural resources, the process has to be quicker and more effective.

### Box 3.3 Communities vs. industries over water

One flashpoint in the looming conflict over water supplies is in the Eastern Seaboard. Over the last twenty years, Map Ta Phut in Rayong province has become the most concentrated industrial area in the country. The industries located there are heavy industries with high usage of water. The surrounding area is famous for its fruit orchards, and also has large areas of sugarcane and other crops. The nearby coastline is the site of the burgeoning resort area of Pattaya. The water supplies for the area come from a single rather modestly sized river (Bang Pakong), and a series of small reservoirs among the hills behind the coast.

2005 was a dry year of low rainfall. The water levels in the four reservoirs supplying Map Ta Phut Industrial Estate fell dramatically. The managers of the estate instructed their tenants that they would have to reduce their water usage by 10 to 40 percent, and find alternative sources on their own.

The firms protested that the estate had guaranteed their water supplies. State agencies rushed to find some temporary solutions. In a short time, 2 billion baht was spent on thirteen projects to enlarge the existing reservoirs, lay piping to draw water from other reservoirs further afield, and divert water from other small-scale sources nearby. Local villagers complained bitterly that they were being deprived of their usual water supplies because they lacked the political clout of the factories.

For the longer term, government agencies drew up plans to pipe water from the Bang Pakong River, and to invest 44 billion baht in 599 separate projects to guarantee the supply to the industrial estate. Villagers again objected as several of these projects would prejudice their local water sources. The controversy remained unresolved through to the following year, which turned out to be a year of water abundance. As the reservoirs refilled, the enthusiasm for such an expensive and controversial programme waned. But it is certain that another dry year will recur before long.

## Water availability

For the longer term, there is severe risk over the quantity of water.

Farming, and especially paddy farming, requires large supplies of water. Industrial and urban usage of water is on a steep trend of increase. Tracking water consumption is difficult as there is no comprehensive

system for monitoring flows in the waterways. ADB estimates show that the main demand still comes from irrigated agriculture (see Table 3.1). However the ADB figures show suspiciously low levels of increase for domestic and industrial uses. Between 1978 and 1995, Bangkok's water demand increased by fifteen times, from 0.5 million to 7.5 million cubic meters per day.<sup>115</sup>

**Table 3.1 Estimated water consumption by sector, 1993-2006**

	1993		2002		2006		Increase 1993-2006	
	Volume	%	Volume	%	Volume	%	Volume	%
	(million m <sup>3</sup> )		(million m <sup>3</sup> )		(million m <sup>3</sup> )		(million m <sup>3</sup> )	
Domestic	3,118	4.6	3,521	4.6	6,593	6.0	3,475	111.4
Industry and tourism	1,311	1.9	1,480	1.9	2,154	1.9	843	64.3
Irrigated agriculture	48,172	54.3	54,394	55.8	61,747	56.5	13,575	28.2
Power generation	20,767	23.4	20,767	21.3	23,425	21.4	2,658	12.8
Maintaining down-stream flows	15,326	17.3	17,305	22.6	15,434	14.1	108	0.7
Total	88,694	100	97,467	100	109,353	100	20,659	23.3

Source: ADB, Thailand National Environmental Performance Assessment (EPA) Report, 2006.

<sup>115</sup> F. Molle, *Water Pricing in Thailand: Theory and Practice*, DORAS Project, Kasetsart University, Bangkok, Research Report no. 7, 2001.

Around 70 billion cubic metres of water can be stored in dam reservoirs. Virtually all the good locations for such storage have been used. Remaining potential projects are small in scale and mostly controversial because they would displace large numbers of people and flood areas of productive land.

During dry years in 1992 and 1993, government had for the first time, to make a macro decision about scarce water resources. The Ministry of Agriculture and Cooperatives issued orders restricting the area of second crop paddy in the Chao Phraya delta in order to ensure enough water for urban and industrial uses. Since then, such orders have been given roughly every other year. Similar orders on allocation are issued at the lower level for smaller basins or sub-basins. Since the early 1990s, one of the objectives of agriculture planning has been to shift area from paddy to crops with lower water usage, through the results have been marginal because much paddy land is not suitable for other crops.

Planners have debated ways to either increase water supplies or restrain demand. Plans to restrain demand mostly propose to use pricing, but agricultural lobbies have fiercely opposed these proposals, claiming that farming is already unprofitable.

Plans to increase supplies have mostly focused on the northeast due to the fact that it has the lowest and least secure supplies. For several years, there was a plan to dam the Mekong River to divert more water into the northeast, but this plan was abandoned on grounds of high cost, unacceptable social disruption, and international complications. Subsequently there were plans to increase the efficiency of water in the rivers of the northeast through small-scale dams and piping schemes (the Khong-Chi-Mun scheme). However, the initial projects under this scheme faced technical difficulties and local opposition, forcing the abandonment of the scheme as a whole.

In 2003, government proposed the visionary idea of a "Water Grid." This scheme had two parts. First, pipes and channels would be built to connect existing water sources, so that overall usage could become more efficient, and short-term situations of shortage and excess could be evened out. Second, additional water would be brought into the system from neighbouring countries, especially from Lao PDR through a pipeline under the Mekong River, but also from Myanmar.

The scheme faced many difficulties. Academics and NGOs challenged the technical feasibility of several aspects, and the political feasibility of securing the agreement of neighbouring countries. Rival government agencies competed with different versions of the scheme. The high cost looked prohibitive. The scheme languished when the elected government fell.<sup>116</sup>

### Approaching the water problem

Water is fundamental to human security in all its aspects – food, health, environmental, economic, and political.

The looming crisis over water is not a local affair but a major international cause for concern. It is not new – the term "water crisis" has been in play for around two decades. It is already being exacerbated by climate change (see below), and will be even more aggravated in the near future.

Here we wish to signal that water is a big problem that needs to be dealt with in a big and integrated way.

Scale and complexity make the issue not only pressing but also daunting and difficult. Water is ultimately a single commodity and a basic human requirement, so everyone is affected. The management of water is widely distributed across many different bodies in the public and private sector. The scale of effort and spending required on solutions has made water projects a focus of bureaucratic and political infighting. These factors dictate some basic principles for approaching a solution.

Water is a prime example of a resource that demands integrated management. In the end, all water is water, whether it is under the ground, in a river, or in a bottle.

As any solution must be integrated and wide-ranging, there needs to be a single institution with ownership of the problem and a wide brief to draft a National Water Plan, covering issues of supply, allocation, and quality.

As the issue is large and complex, this institution needs to be equipped with adequate resources of both manpower and budget. The institution will need the resources in order to draw on high-quality

<sup>116</sup> F. Mollé and P. Floch, "Megaprojects and Social and Environmental Changes: The Case of the Thai "Water Grid". *AMBIO: A Journal of the Human Environment*, Vol. 37, No. 3, 2008, pp. 199-204

technical assistance, both local and international. Because the number of stakeholders involved is so large and their interests so varied, some means has to be found to make this institution relatively immune from bureaucratic and political pressures.

## DECIDING THE FUTURE OF THE SMALL FARMER

*The issue of food stability is part of a larger issue concerning the future of Thailand's small farmers, with multiple implications for human security.*

The future of Thailand's agricultural sector is increasingly uncertain. Smallholder farming was the mainstay of the Thai economy in the recent past. It is now under threat. It has declined because of increasing pressure on its resource base, and because of consistent neglect. It has not been economically viable for many years, and now faces collapse because young people are draining away. The implications for human security are manifold. Food security may be at risk. The "informal social security" provided by the village household may disappear. There is a national decision ahead over whether to allow this decline to continue, or whether the costs are too large.

### Decline of the family farm

Thai farming is traditionally based on the small, independent family farm. Although the number of large-scale plantation-style farms has increased in recent years, these are still a minor part of total area. By size, most farms are clustered around the median of around 20 rai (3.2 hectare) (see Figure 3.3).

Over the past thirty years, the economics of the family farm has steadily declined. This decline has been a cumulative effect of many different causes,

each advancing only gradually but cumulatively exerting a relentless effect.

### Declining access to resources

In many areas, soil quality has declined through intensive mono-cropping and the use of chemicals. Access to water has grown marginally more difficult with increasing competition for finite water resources. Declining forest cover has reduced access to inputs

#### Voices from the project discussions

"Young people who have gone off to study or work in a factory won't come back and work on the farm. They are addicted to TV and the internet. They won't help their mother and father. There is something wrong in our culture."

"In the future, young people don't want to be rice-farmers because farmers are looked down on by society. The government and the society do not help the farmers. That's why the farmers are disappearing. The only way to change this is for government to take more responsibility."

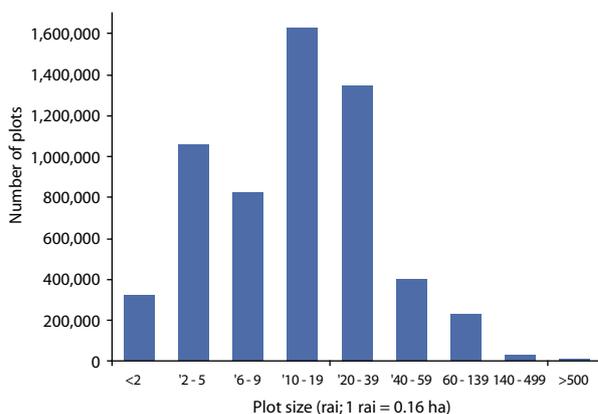
"If farmers have no land to make a livelihood, they have no security in life."

"The government's rice mortgage scheme doesn't work. There are too many rules, procedures and quotas. If you are too late, you cannot sell. You have to queue up at the warehouse and then queue up at the bank."

"The problem is not so much unemployment but non-employment. Young people who have had education cannot find work. They think they should have a job in government or something like that, but there aren't any jobs. The problem began about 2001 when children started to spend a longer time in school. We need more education about education – that education is not just about becoming a government official, but having a better life."

"With some education, today's youth expect to earn 5,000 baht so if there is only a job for 3,000 baht, they won't take it. We need a change in the curriculum. Children are being taught the wrong values."

Figure 3.3 Land distribution, 2003



Source: ONEP, 2008, p. 168

and ancillary sources of income. The area devoted to agriculture has remained constant at around 21 million hectare while the absolute number of people working on the land has continued to increase – by over half a million in the past decade. The average size of holding declined from 4.04 hectare in 1995 to 3.56 a decade later.<sup>117</sup> In the past, large landholdings have been relatively rare, but this situation may already be changing (see Box 3.4).

**Box 3.4 Large holdings**

In 2003, a study found only 2,470 cases of large landholding (over 48 hectare), accounting for less than 3 percent of the agricultural area.<sup>118</sup> But there are signs that such holdings are on the increase as a result of the growing demand for fuel crops such as sugarcane and oil palm which lend themselves to plantation-style production.

Several firms and entrepreneurs with interests in bio-fuel processing have also been interested in controlling large landholdings for raw material supply, either through ownership or through contract arrangements. One prominent Thai entrepreneur is reported to have acquired 16,000 hectare planted with sugarcane, oil palm, rubber, and cassava, mostly destined as input for production of bio-fuels, and to control another 20,000 hectare in Cambodia under similar crops.<sup>119</sup>

Some households have lost access to land, especially during the 1997 financial crisis. In 2002, some farmers in Lamphun and Chiang Mai occupied land that they claimed had formerly belonged to their communities. Eleven were prosecuted for trespass and sentenced to a year in jail. In several parts of the South, landless farmers occupied private palm-oil plantations but were evicted by state personnel.

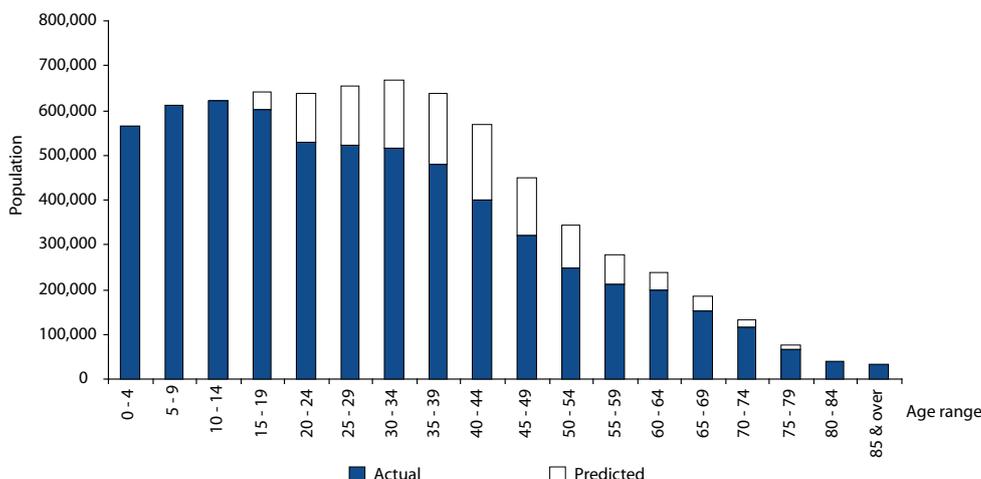
While the access to productive resources has imperceptibly but persistently declined, so also agricultural prices have steadily declined, except in recent years, and then only temporarily.

Farm households have reacted by seeking more and more of their income from sources other than agriculture. In 1976, agriculture supplied 54 percent of farming households’ income in 1976, but only 33 percent in 2004.<sup>120</sup>

**The ageing farmer**

Increasingly, farm households are not reproducing themselves. Many young people leave to further their education, to enjoy themselves, to gain experience, to earn income, some of which can be remitted to support the parental household. They may stay away for a few years, for their whole working life, or forever. In the rural northeast for instance, the age pyramid expected on the basis of the number of children aged 0 – 14 is missing around a million people aged 15 to 49 – about a quarter of the expected total in this age range (see Figure 3.4).

**Figure 3.4 Age pyramid, predicted and real, rural Northeast, 2001**



Source: Calculated from NSO data

<sup>117</sup> ONEP, *Strategy for Land Management: Planning of Land Holding, Land Development and Conservation, and Reservation of Public Land*, 2008, p. 169 (T).

<sup>118</sup> *Ibid.*, p. 168.

<sup>119</sup> *Bangkok Post*, 4 February 2008.

<sup>120</sup> Data from the Office of Agricultural Economics reported in the annual, *Agricultural Statistics of Thailand* (T).

Even for those who linger at home or return after a sojourn away, there is a growing reluctance to take up agriculture. Gaining education is strongly associated with escaping from farming. The first rural youth who ascended the education pyramid in past decades typically found employment as government officials. That expectation remains even while the numbers ascending secondary and tertiary education now far exceed the demand for new government personnel. When posts such as district office staff are advertised, the number of applicants exceeds the number of posts by several hundred times.

The national school curriculum is not geared towards training farmers. Few of those who go through agricultural college wish to return to farming. Children of farming families once gained farming experience by working on the farm during school recess, but the school calendar and the agricultural calendar no longer match.

During the local discussions that took place as part of this report, several discussants said that the problem in their locality was not unemployment as a result of the crisis, but non-employment because of the mismatch between realities and expectations. Young people who had received education but could not find jobs would refuse to work on the farm.

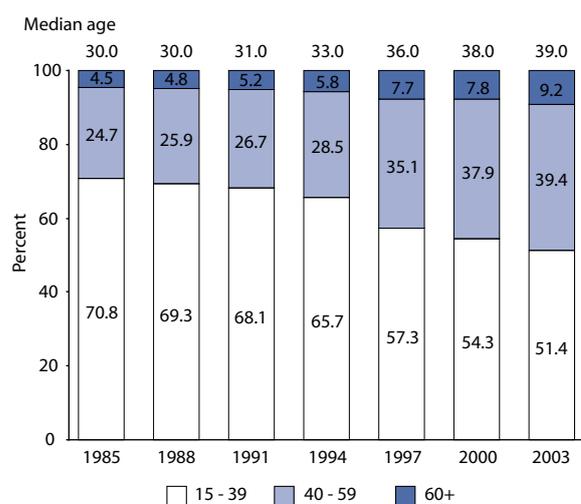
As a result, the age structure of the agricultural workforce is steadily changing over time towards the higher age range (see Figure 3.5). The median age of agricultural workers has risen from 30 to 40 over the past two decades. In 2008, a government survey found that the average age of a rice farmer was 55.<sup>121</sup>

To counter this trend the agriculture and education ministries launched a scheme to develop a “new generation of farmers” through a five-year education and training program in vocational colleges.

### Contract farming and GMOs

Contract farming has spread as one counter to the weakening position of the family farm. The system began with poultry farming several decades ago but has since spread to fish, pork, vegetables, and various other crops. The firms supply inputs and buy back the finished product. The firms claim that the system is superior to independent family farming

**Figure 3.5 Age of agricultural workforce**



Source: Bryant and Gray, 2005

because it uses higher technology than what the individual farmer would normally have access to, and it partially insulates the farming household against risk. Institutions such as the ADB have become enthusiastic supporters of contract farming as a solution to poverty and instability for farmers, and government is also cautiously supportive. When food prices rose sharply in 2008, a leading agribusiness conglomerate campaigned for government support to extend contract farming into rice production, the country’s largest agricultural subsector.

However contract farming has not been without problems.<sup>122</sup> In some cases the contracts are written very much in favour of the company, allowing unilateral changes of conditions and even termination. Some firms operate on slash-and-burn like principles, exploiting the local resource base beyond sustainable levels, then moving on when disease or deterioration sets in. Some types of contract farming, particularly aquaculture, have been responsible for pollution. It is important that the government carefully balance its role as promoter on one hand, and regulator on the other.

GMOs are sometimes promoted as a means to raise the productivity and reduce the insecurity of the small farmer. However, Thai NGOs have argued that the introduction of GMOs will make the small farmer more subordinate to corporate exploitation, while also putting Thailand’s international markets at risk (see Box 3.5).

<sup>121</sup> *The Nation*, 31 March 2008.

<sup>122</sup> Chatupon Wangsuwattana and Chonlatee Wattanawetwichit, “Legal Guidelines for Protection of Farmers in Contract Farming System”, Research Paper, Quality of Work Life for Informal Worker Programme, 2007 pp. 11-12, <http://sadathai.org/Download/report.pdf>, accessed 10 October 2008 (T).

**Box 3.5 GMOs**

Experimentation with GMO crops in Thailand reaches back to 1982. In 1994, the government permitted field trials of GMO tomatoes developed by Upjohn, and corn and cotton developed by Monsanto. After the Monsanto cotton was found to have leaked beyond the experimental plots, NGOs accused the government of negligence. In April 2001, the government halted all import and cultivation of GMOs except under greenhouse and laboratory conditions.

Surveys made in the following years showed that a majority of farmers and consumers had awareness of GMOs due to the media coverage of the earlier controversy. The surveys also revealed a general opposition to allowing free development of GMO products. In particular, the agricultural sector felt that its main export markets were in areas, including Europe, which were reluctant to embrace GMOs, and hence Thailand could imperil its exports were it to gain an image as a GMO country.

In 2004, there was another panic after NGOs exposed that GMO papayas on experimental plots in Khon Kaen had contaminated plants in the surrounding area. Again the NGOs accused government agencies of negligence, and demanded a tighter monitoring system and regulatory framework.

**Sustainable farming**

In the Eighth Plan launched in 1997, government undertook to promote sustainable agriculture, inspired by HM the King's Sufficiency Economy philosophy.<sup>123</sup> A target was set to convert at least one fifth of the total agricultural area to sustainable practices. However, only a small fraction of this target was achieved. The following plan continued to promote sustainable agriculture but with no better results. The post-mortem apportioned blame to both the farmers' lack of faith in the scheme and the government agencies' over-emphasis on quantitative targets.<sup>124</sup>

**From neglect to concern**

Thailand's agricultural sector is highly diverse, both in the range of crops and the organization of production. In recent years there has been a growth of contract farming, large-scale plantations for energy crops, and some sophisticated, highly capitalized individual operations. Yet, the majority of Thailand's agricultural production still comes from small-scale family farms.

Nominally these farms still support two fifths of the population and hence are critical to the economic security of a major part of the population. In reality, the situation is more complex. The economics of the small family farm have been in decline for several decades, and these operations are sustained by subsidies from family members working elsewhere. But at the same time, these farms also play a role in social security. At moments of economic stress, migrants return home to the farm. This happened during the 1997 Asian financial crisis on a large scale. Individuals use the same strategy to manage periodic unemployment. Many still return to the family farm permanently after retirement. In effect, the family farm functions rather like a contributory social security scheme. As a result, its role in economic security is even larger than people usually appreciate. Nobody is quite sure how extensive this system is, and how well it is surviving.

The rising average age of the farmer suggests that some major change may be approaching. From one perspective, a transfer of the workforce from farming to higher-value activities elsewhere would benefit both the individuals and the national economy. But the fact there has been no net transfer of people from the agricultural to the non-agricultural economy in the last decade suggests that the non-agricultural portion has limited ability to absorb more labour.

**Approaching the future of the family farm**

As Thailand has switched its attention towards industrialization and urbanization, agriculture has suffered from neglect. Investment has been low. Public resources devoted to the sector have been minimal. The natural resource base on which agriculture depends has deteriorated. Because the system of small-scale family farming that prevails in Thailand is so resilient, this steady deterioration has gone almost unnoticed. But there are signs that the process is approaching a critical point. The implications for human security are manifold. Food security may be at risk. The "informal social security" provided by the village household may disappear.

<sup>123</sup> UNDP, *Thailand Human Development Report 2007: Sufficiency Economy and Human Development*, Bangkok: UNDP, 2007.

<sup>124</sup> NESDB, *An Assessment on Capacity and Living Quality Development of Farmers in Sustainable Agriculture*, 2004 (T).

There is a national decision ahead over whether to allow this decline to continue, or whether the costs of decline are too high.

Preserving the small-scale farming sector at its current size and with its current characteristics is not the objective. In comparison with other countries, the proportion of the labour force in agriculture should drop below its current level. But over the last decade, the non-agriculture sectors of the Thai economy have shown relatively weak capacity to absorb more labour. Besides, agriculture is an area in which Thailand has strong comparative advantages in world terms. What is needed is a managed transition from the current situation to a smaller but also more efficient and sustainable small-scale farming sector.

This transition will need some sense of direction, some guiding force. Perhaps what is needed is a national commission to study the issue in depth and come up with policy directions for guiding the work of various government agencies.

Some of the major issues are: support during transition; water management; technology; and education.

*Support.* As in many countries, Thailand's small-scale agriculturists need some support to be viable. At present this support comes partly in the form of private transfers from urban earnings, and partly through schemes of price support. The latter are not efficient. They often reach the wrong targets, distort the market, and undermine Thailand's international trading position. It would be better to use the same funding to provide support for technical upgrading and environmental protection. This would serve

the twin purposes of providing support for small-scale producers during a time of transition, as well as moving towards a more efficient sector. As part of this initiative, support for sustainable agriculture should be substantially increased.

*Water management.* Some reorientation is probably needed in the approach to water management for agriculture. In the past, agencies have been oriented towards the twin goals of irrigation and hydropower, and have tended to focus on large-scale projects. In order to be of greater relevance to the small farmer, the goals need to be reoriented towards the management of the erratic nature of supply (the drought/flood cycle), and focus more on small-scale projects.

*Technology.* More research and dissemination work is needed on technologies relevant for the small-scale farmer. Of particular importance will be technologies and systems for farming fuel crops on a small scale. With respect to GMOs, government should stand firm on the precautionary principles as GMOs can affect biodiversity and food safety, and are likely to make small farmers more subordinate to agribusiness. With respect to contract farming, government should act as an independent monitor to ensure fairness and to protect the small farmer.

*Education.* A serious look is needed at both the content and culture of education. Thailand's education system was initially designed to train bureaucrats, and was later expanded to train recruits for the business and professional worlds. It needs to adjust again to train a modern style of farmer.

## ACCOMMODATING NON-CITIZENS

*The least secure people in Thailand are those without citizenship. Their numbers have begun to make some in the host community feel insecure also.*

There are around 3.5 million people living in Thailand with temporary status, quite a few without clear citizenship.<sup>125</sup> They include illegal and semi-legal labour migrants, stateless persons, displaced persons, and long-standing residents who have not acquired full citizenship. They themselves are greatly at risk because they possess limited rights. They also make some Thai citizens feel they are at risk – because of competition over employment, potential for crime, exposure to disease, or just because of the sheer number of non-citizens.

### Who are the non-citizens?

A few years ago, the non-citizens residing in Thailand included a few groups of displaced persons, and several hill communities. The numbers are now quite large. Nobody is quite sure how many there are because some people enter and leave the country illegally.

This large group breaks down into four components which overlap to some extent.

### Ethnic minorities without full citizenship

Certain groups of non-Thai nationals who have been in the country continuously for over ten years and are unable to return to their country of origin are defined by government as “ethnic minorities.” They can request status as legal migrants and apply for Thai nationality. Those of Thai descent and children born in the country can also request for Thai nationality. Some fifteen ethnic minority communities that in-migrated as a result of wars in the region many decades ago have been granted special permission to stay under this definition. They range from remnants of the Chinese Kuomintang army from the Second World War to displaced Myanmar nationals with Thai ancestry. They are issued with identification cards which confer temporary or permanent residence but not full citizenship. Many are applying for Thai nationality. In the past, some groups have been granted citizenship by specific cabinet orders, but only after 15 to 20 years of residency.<sup>126</sup>

### Voices from the project discussions

“Many migrants sneak their way through agents who help them evade all the rules and procedures.

“We need to set up proper systems for migrant workers: health, accommodation, waste disposal, education for their kids, crime prevention. We need to make this issue our provincial agenda and set up a special team to cope with it.”

“We cannot avoid using foreign labour, but we need to organize proper systems. Now there are too many people outside the system – Myanmar, Lao, hill peoples without ID cards, illegals in unknown numbers.”

As of March 2009, there were 346,345 persons in this category, including 81,752 who are children born in Thailand.<sup>127</sup> Most live in the north or in the hills on the western fringe of the country.

### Migrant workers

The Thai economy now relies heavily on migrant labour, especially from Myanmar but also from Cambodia, Lao PDR, and China.

In 1988, political situation in Myanmar coincided with the Thai economy’s acceleration to double-digit growth. Thousands of Myanmar took refuge in Thailand, and Thai employers pressured government to legalize their status to provide the needed cheap labour. By 1996, the Thai government had evolved a system of annual registration for migrant labourers who were in employment.

At present, migrant workers from Myanmar, Lao PDR and Cambodia may apply for a temporary stay in Thailand. Since 2004, the system has been extended to include spouses and children in order to have fuller documentation of the true situation. The migrants are eligible for certain social services including health care. However the registration process imposes costs on the migrant and on the employer, and hence is never complete. Those that do not register are considered illegal migrants.

<sup>125</sup> On terminology. A citizen has a legal claim of belonging to a political entity, usually a state. A stateless person does not belong to any state, or is unable to enforce that claim. A displaced person is outside his/her country of nationality or habitual residence and deserving of asylum for various reasons. The term “non-citizens” is an invented catch-all term for persons more or less permanently resident in a country but not enjoying the benefits of citizenship.

<sup>126</sup> Kritaya Archavanitkul, “Ethnic Minorities with Residency Status in Thailand”, *Damrong Rajanubhap Journal*, 15:6, July-September, 2005 (T).

<sup>127</sup> Figures calculated by Kritaya Archavanitkul and Kulapa Vajanasara from the national registry of the Bureau of Registration Administration, Ministry of Interior.

In March 2009, the total number of registered migrant labourers was 1,656,144, mostly Myanmar, but also Laotians, Cambodians, Chinese and others. Estimates of the number working without registration range up to another million.

### Stateless and rootless

The next group includes people who have lived in Thailand for a long time but have no documentation. These include hill communities who failed to register as Thai nationals at birth, or were denied that opportunity, and others who slipped through the documentation net. There are systems to allow such persons to apply for Thai nationality. The procedure is now covered by a law passed in 2000. However, there are still many who have not yet been granted nationality.

In 2005, government began the process of registering the people in this category including students who had no nationality documentation. By March 2009, the count had reached 191,570 but was not yet complete. The majority live in the north.

Children born to stateless persons inside Thailand have the right to be registered at birth. But in practice, many parents are unaware of this, and some hospitals simply fail to comply.

### Displaced persons

Officially, Thailand has no “refugees” as the country has decided not to adhere to the UN Convention Relating to the Status of Refugees (adopted 1951). Instead, government defines those fleeing from fighting and political conflicts in their countries as “displaced persons” and accommodates them in places referred to as “temporary shelters.” The largest groups are those displaced by fighting in Myanmar in recent decades. But there are also Hmong stranded after the wars in Indochina, and recent influxes of the Rohingya minority from western Myanmar.

The presence of these people in large numbers is testament to the Thai government’s humanitarian outlook and readiness to provide “security or refuge” to people fleeing wars or internal conflicts over many decades.

Numbers are uncertain. Government has a record of 127,341 displaced Myanmar in nine shelters. But there are also those who have entered the

shelters without official registration. In 2008 the US Committee for Refugees and Immigrants put the true figure of displaced persons as 145,000 in camps and another 50,000 outside.<sup>128</sup> Perhaps another 200,000 of those displaced by the fighting in Myanmar, mostly of Shan ethnicity, were not provided with shelters and now count among the unregistered migrant workers. Groups of Hmong and Rohingyas (around 20,000) are also not counted in these figures. Probably the true total is around 400,000 people.

Since 1998, UNHCR has been allowed to register people and provide care in some of the shelters. According to the Thai regulations, displaced persons from Myanmar are only permitted to stay in the shelter areas, but in practice some two-fifth seek work outside. In some areas like Mae Hong Son, many of them work as day labourers for the agricultural sector in nearby areas.<sup>129</sup>

The official total of non-citizens from these four groups is 2,396,347 people. This does not include an estimated million illegal migrants and several tens of thousands of undocumented displaced persons. A reasonable estimate of the true total is 3.5 million. That would make them about five percent of the country’s population. Since a large share of the illegal migrants from neighbouring countries are of working age, the non-citizens’ proportion of the labour force is undoubtedly even higher.

### The insecurity of non-citizens

All four of these groups face insecurity in many different ways. Their legal status, their position under Thai law, and their access to the judicial system is uncertain. Their access to services such as health care and education is uneven; in some places local authorities are open-minded and helpful, but the non-citizens have no rights of access per se.

Their ability to earn an income is hampered by restrictions on movement. The fact that they have limited rights makes them vulnerable to exploitation and violence of various kinds. They are often forced to do heavy work at low wages, placed in unsafe or dirty work environments, are unable to access health care, and are unprotected by the Thai labour laws when accidents occur. Even for those who have work permits, there is no official mechanism to help them when faced with problems. Many have been trapped by the human trafficking trade or physically and sexually abused, while others are harassed and discriminated against by Thai officials.

<sup>128</sup> USCRI, *World Refugee Survey 2008*, Washington, DC: USCRI, 2008

<sup>129</sup> *Ibid.*

For the displaced persons who must remain in the temporary shelter areas without jobs or any kind of economic activity, their lives are overwhelmingly dependent on others. As a result, many lack self-worth, initiative, and self respect. Many of the shelters are harsh and threatening, resulting in high rates of depression and other psychological illnesses. There have also been reports of physical violence against children and women, but in most of the cases there were no arrests.

The situation of the stateless is even worse. Without identification papers, birth certificates and so on, their basic rights are very limited from the beginning of their lives. As their births are not recorded, their deaths also leave no trace and have no meaning to any community or state. Without identification documents to prove citizenship, they have none of the civil rights normally accorded to those born in a modern state.

### **Making others insecure too**

The existence of such a large number of non-citizens makes some other people feel threatened. There

#### *Voices from the project discussions*

“They bring diseases with them. It’s not their fault. They have to travel through the forest. Then when they are here, they do dirty jobs but don’t have the facilities for washing. And they can pick up diseases from poor working conditions.”

“Many more Myanmarese have been coming since Cyclone Nargis. Probably now there are 400,000 in our province. We need to make sure they are all registered for purposes of control. Suppose one day they were to surround the government offices, the police stations, the banks. All would become theirs.... None of us can be sure that one day they will not be a danger.”

“Hospitals are crowded with both Myanmarese and Thai. The services cannot be expanded enough to meet demand.”

“In other countries such as Canada, the government makes sure migrants get taught about the local language and culture. There’s nothing equivalent here, even for legal migrants.”

have been stories of immigrants reintroducing long-eradicated diseases such as elephantiasis. Newspapers sensationalize cases of crimes involving immigrants. Certain communities of displaced persons are regularly accused of being involved in drug trading. Military figures have occasionally drawn attention to the large number of migrant workers as a threat to national security. In November 2007, the governors of five coastal provinces issued an order forbidding migrant workers from moving outside their homes after 10 p.m., owning mobile phones, driving cars or motorcycles, and gathering in groups of more than five persons. Such order was later revoked.

These various actions are evidence of fear and distrust which hold a potential to generate violence. The existence of these large communities of noncitizens presents a major challenge to the meaning of human security in a contemporary context where nationality and the population within the national borders are no longer congruent. Who is “human”? All too often, the state uses the denial of human security and opportunities for human development as a means to deter and punish. But in truth displaced persons, ethnic minorities, stateless, and labour migrants deserve human security on a par with everyone else.

### **Approaches to accommodating non-citizens**

The number of non-citizens in Thailand has risen steeply over past decade. It seems unlikely that this situation will be reversed in the near future. Systems and policies to manage this issue have tended to be piecemeal and inconsistent, in reaction to a changing environment. A recent dispatch of about 4,000 Hmong including 158 with the UN-recognized refugee status back to Laos represents a new development. It is time for a more creative and proactive approach. The twin objectives should be to reduce the insecurities of the non-citizens, and at the same time to reduce the growing insecurity of the host population over this issue.

One part of the problem is a legacy of the past – of the era when Thailand was surrounded by states embroiled in international or local conflicts. The presence in Thailand of ethnic minorities who arrived in flight from these conflicts is testament to an underlying humanistic layer in the country’s culture. That same humanism should now be applied to clearing up the remains of a problem which essentially belongs to the past. The long-settled ethnic minorities are, in practice, a part of

the population. They are well documented. Their numbers are not so great. There is every reason to facilitate their transition to full citizenship.

The issue of unregistered hill peoples originated from the same era and belongs in the same area of concern. Here the policy on absorption is now clear, but the implementation is sometimes undermined by old attitudes.

Labour migrants are a different issue. Most are temporary or semi-permanent residents. Policy needs to meet concerns over security as well economic demands, while respecting the human rights of the migrants. A first requirement is the fullest possible registration of working migrants, without economic disincentives which prevent such a policy ever achieving success. The authorities are now moving in that generation. A second stage should be to ensure that migrants enjoy the same regime of taxation, labour rights and social protection as the national

workforce. A third requirement is for measures to combat the "ghetto-ification" of labour migrant communities. More resources need to be put towards language education and other measures to make Thailand a more welcoming host for these assets to the national economy.

If the question of the long-standing displaced persons can be resolved, this will leave only a much smaller issue of "current" displaced persons, particularly the occasional overflows from the conflict within Myanmar. Once the problem is scaled down to this issue, Thailand should consider making fuller use of UNHCR to help manage the problem.

A major barrier to the fair treatment of non-citizens lies in the widespread national prejudice against neighbouring countries, especially against Myanmar. It will be a long process to root out such deep-seated attitudes, but a start needs to be made.

## CONFRONTING PERSISTENT INEQUALITY

*Thailand is a very unequal society. There is growing awareness that inequality lies at the root of several forms of human insecurity, including rising political conflict.*

Growing inequality on a global scale has been one of the most striking trends of the past two decades. The World Bank found that inequality has increased both within countries and across countries. It also noted that inequality lay behind many forms of human insecurity including crime and political conflict.<sup>130</sup>

The fact that the trend of growing inequality over recent decades has been so pervasive has created an illusion that it is almost natural, and that attempts to resist this trend would be a waste of effort.

This judgment is being rapidly revised in the context of the current global economic crisis. Periods of long-term economic depression are also times of growing social and political conflict. A higher value is now being placed on social cohesion as an asset for weathering crisis.

Several landmark studies have raised the profile of the inequality issue. In the new concept of the “economics of happiness” that came to prominence in the past decade, greater social and economic equality are identified as factors which contribute significantly to individual happiness. Similarly, a recent cross-world comparison concluded that more egalitarian societies are more successful in many different ways.<sup>131</sup>

There is no simple congruity between economic division and political conflict. Many factors are in play. The growing political conflict in Thailand in recent years has elements of regionalism, ideology

and personality. But it is difficult to contend that inequality is not a contributing background factor. The richest and poorest areas of the country are clearly on opposite sides of a deepening political divide. During the last general election, the provinces that chose one of the two main parties had a far higher average income and a far higher human development ranking, than the provinces that chose the other (see Table 3.2).

In Thailand, the issue of poverty became part of the national agenda in the late 1970s in the context of the cold war. Eradicating poverty was seen as an important contribution to alleviating ideological conflict. Poverty has remained on the agenda ever since, and the results have been positive.

Inequality has never been part of the national agenda in the same way. Certainly it has been acknowledged in national plans, especially from the mid-1990s onwards. But it has never been a significant factor in policy-making.

In the light of the growing political conflict of the past five years, paying more attention to inequality has become necessary and urgent.

### Thailand’s persistent inequality

In simple economic terms, how unequal is Thailand compared to other countries?

One easy measure of economic inequality is the ratio between the average income of the top fifth of households and the bottom fifth. In societies which value egalitarianism, such as Japan and Scandinavia, the multiple is around 3-4. In the rest of Europe and North America, it is 5-8. Among Thailand’s Southeast Asian neighbours, the figure is around 9-11. In Thailand it is around 13-15 (see Figure 3.6 and Table 3.3).

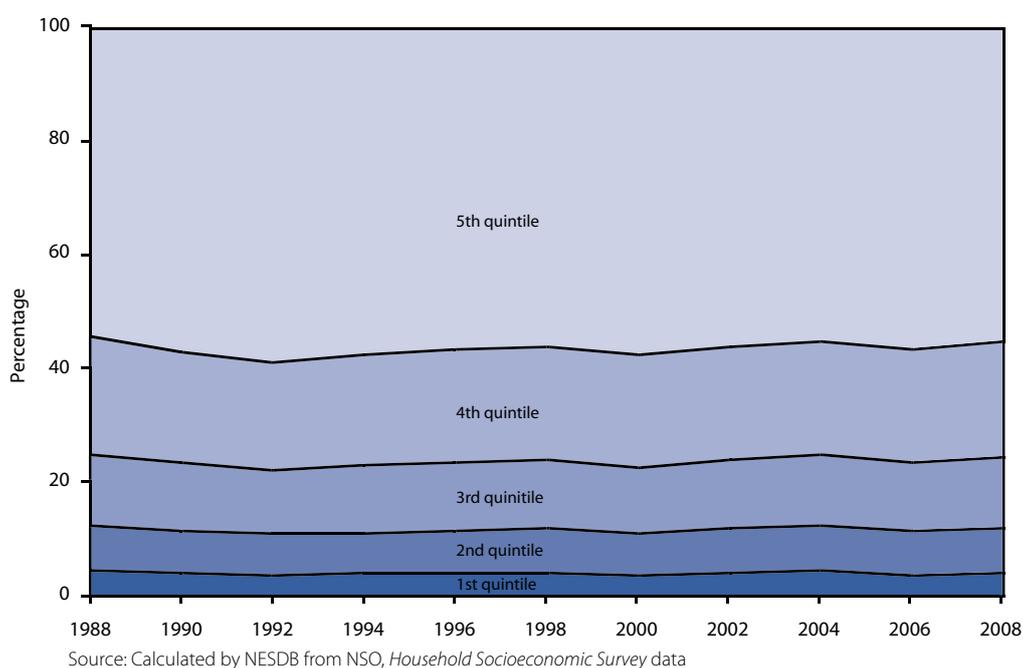
**Table 3.2 Average income and human development ranking of provinces supporting two main parties at 2007 election**

	Average per capita gross provincial product in 2007 (baht/year)	Average ranking on 2007 Human Achievement Index
Provinces supporting Party 1 (n=25)	221,130	22
Provinces supporting Party 2 (n=32)	92,667	45

Source: Calculated using NESDB, *Gross Provincial Product 2007*, and the Human Achievement Index from *Thailand Human Development Report, 2007*. For definition of the HAI, see Part II of this report. Includes only the provinces where one party won a majority or plurality of seats. Removing Bangkok, the average GPP for party 1 is 172,666.

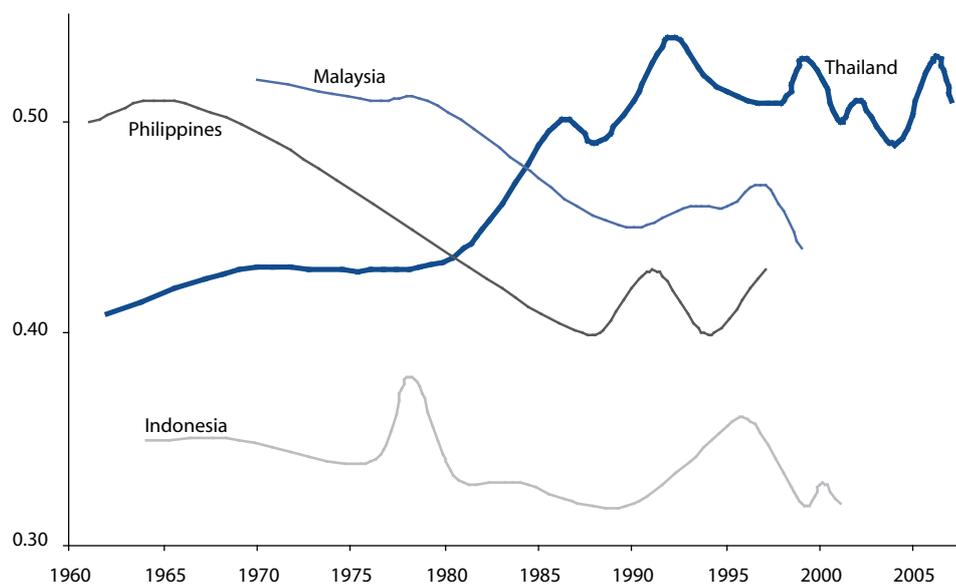
<sup>130</sup> World Bank, *World Development Report 2006: Equity and Development*, Washington DC: World Bank, 2006

<sup>131</sup> Richard Wilkinson and Kate Pickett, *The Spirit Level: Why More Equal Societies Almost Always Do Better*, London: Allen Lane, 2009.

**Figure 3.6 Income distribution, 1988-2008**

Thailand's high inequality among households is a function of many divisions – between urban and rural; between Bangkok, the major concentration of wealth and power, and the rest of the country; between those parts of the economy which have become hitched to globalization and those that have remained more detached; between the one third of the workforce in a formal economy of salaried jobs and sizeable enterprises, and the two thirds in an informal economy of family farms, casual labour, and petty businesses.

Since measurement began around 1960, income inequality in Thailand has tended to get worse. The Gini coefficient rose from around 0.4 to over 0.5. (0 represents perfect equity). According to some theories, worsening inequality is to be expected in the early stages of development, but should be reversed later – at first, only a few benefit, but later others catch up. That has tended to be the pattern in neighbouring countries with fairly similar economies (see Figure 3.7). But in Thailand, the worsening trend continued until recent years.

**Figure 3.7 Gini coefficients of household income, selected Southeast Asian countries**

Source: Adapted from a graph prepared by Hal Hill, ANU.

**Table 3.3: Share of national income by population quintile, 1998-2008**

Population group	Share of national income (%)										
	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008
First quintile (poorest)	4.58	4.29	3.96	4.07	4.18	4.30	3.95	4.23	4.54	3.84	4.30
Second quintile	8.05	7.54	7.06	7.35	7.55	7.75	7.27	7.72	8.04	7.67	8.01
Third quintile	12.38	11.70	11.11	11.67	11.83	12.00	11.50	12.07	12.41	12.12	12.42
Fourth quintile	20.62	19.50	18.90	19.68	19.91	19.82	19.83	20.07	20.16	20.08	20.22
Fifth quintile (richest)	54.37	56.97	58.98	57.23	56.53	56.13	57.45	55.91	54.86	56.29	55.06
<b>Fifth quintile/ first quintile</b>	<b>11.88</b>	<b>13.28</b>	<b>14.90</b>	<b>14.07</b>	<b>13.52</b>	<b>13.06</b>	<b>14.55</b>	<b>13.23</b>	<b>12.10</b>	<b>14.66</b>	<b>12.81</b>

Source: Calculated by NESDB from NSO, Household Socioeconomic Survey data

Over the last decade, there is a hint that the trend may be turning, but the figures do not yet show a clear trend.

### Why the persistence?

There is no agreement on why Thailand should have such relatively high and stubborn inequality, but several factors seem to be relevant.

There is a large gap between urban and rural populations, reflecting differences in productivity which in turn reflect unevenness in development effort over the past generation. There are big differences between regions, which in part reflect their resource endowment, but also show the cost of being distant from the centre in such a centralized economy and polity.

Income earning capacity correlates closely with education, hence inequality reflects the uneven access to education over the past generation.

With the exception of the income tax, other major taxes are all regressive.<sup>132</sup> Several studies have shown that budget spending tends to reinforce rather than counteract inequality.<sup>133</sup> Richer provinces have the political clout to get more than their fair share of project spending. Education spending in the past has subsidized tertiary education more than primary. Behind these economic factors there are some stark political realities. Power is unevenly distributed. Thailand's parliamentary democracy does not do a good job of providing representation for large groups of the population. Access to the judicial system is not easy or even. And further back still there are cultural factors – the overhang

of patron-client ties, the culture of deference, and inequities reinforced by the petty rituals of everyday life.

### Putting inequality on the agenda

The fact that economic inequality is unusually high and unusually persistent compared to neighbouring countries indicates that the problem is deeply rooted. There are no easy solutions.

Putting inequality on the national agenda sounds easy but in practice is very difficult. The fact that several national plans have enshrined the goal of combating inequality yet virtually no policies have emerged suggests there are powerful forces against the acceptance of this goal. Part of the problem lies in popular attitudes. Thailand's urban society has a strong ethic of self-help which attributes both success and failure to the individual (or family). Some are unwilling to accept that there is any socio-economic basis behind rising political conflict because that undermines the idea of a natural social harmony.

However, against the background of deepening political divisions which have clear social underpinnings, there are signs of some reorientation. Two major think-tanks have launched projects to investigate the roots of and solutions to Thailand's persistent inequality.<sup>134</sup>

An important beginning is the realization that the degree of equality and inequality in society is a matter of social choice, not the result of the operation of market forces. Countries such as Japan, Norway, and Sweden self-consciously value the benefits of social cohesion that come from greater equality.

<sup>132</sup> Working Group on Income Distribution, NESAC, *Fiscal Policies and Measure for Equitable Income Distribution*, 2008 (T).

<sup>133</sup> For example, Hwa Son, Hyun. "Is Thailand's Fiscal System Pro-poor? Looking from Income and Expenditure Components." Paper presented at the second inequality and pro-poor growth spring conference on the theme of 'how important is horizontal inequality?' World Bank, Washington DC, 9–10 June 2003.

<sup>134</sup> These are the King Prajadhipok Institute and the Thailand Development Research Institute.

Perhaps what is needed first of all is more prominence for the issue in national debate, and more open discussion of the costs and benefits of trying to move towards a more egalitarian society (see Box 3.6).

Inequality has no single cause. It will diminish only if there are several initiatives. In practice, this process probably needs political leadership, perhaps accompanied by some process to build a national consensus. Some of the key issues are as follows.

It is widely known that Thailand's tax system is moderately regressive, and that budget spending tends to reinforce rather than counter inequalities, such as those between regions. Reform is needed in both tax and spending.

A progressive land tax can have a positive effect by making more land available for those who need it, and exerting pressure for a more productive use of land in general.

Many studies have indicated the key role of education in improving people's life chances. Over the last decade significant advances have been made in providing access to education. The critical issue is now the quality. A major project is needed to upgrade the quality of Thai education across the board. Rural schools need special attention.

Thailand has instituted anti-monopoly legislation, but the implementation has not been effective.<sup>135</sup> This issue needs to be looked at again.

Public goods play an important role in countering inequalities. Thailand has a relatively weak provision of public goods, constrained by a low ratio of government budget to GDP. The universal health scheme provides an example of how public goods can be effective. Over the medium term, Thailand should be intent on increasing the ratio of budget to GDP, and increasing the range and quality of public goods.

There are more complex issues involved in combating the political and social structures that underpin inequality. The pervasive role of "influence" to gain

preferential access to resources of all kinds is a major cause of inequality. This will only be undermined by more open participatory politics, better mechanisms for enforcing rights, an overhaul of the police force, easier access to judicial process, and strengthening the rule of law.

### Box 3.6 Policy making on national issues

Thailand has no mechanism for evolving policy on major national issues by tapping technical expertise or allowing public participation. Political parties do not act as channels for any public role in policy-making. Traditionally, ministries monopolize the process. More recently, the National Economic and Social Advisory Council (NESAC) was created, but the Council has a wide brief and limited resources. The recent five-year plans have involved a widespread process of consultation, but these plans are only indicative documents. There is no mechanism, similar to a Royal Commission in the UK or special committee of the Senate or Congress in the US, for evolving policy on a specific and major national issue.

But perhaps there is a model in the process that evolved the 1997 constitution. The process was initiated by parliament, but the drafting committee was established independent of parliament. A Constitution Drafting Assembly was established with 76 representatives from the provinces, and 23 experts on the matter at hand. The assembly canvassed views from the public through a wide process of consultation. The resulting draft was converted into law by the usual legislative process.

There is no reason why such a process should be reserved for drafting constitutions. Could the process be adapted, with some simplification, to evolve policy on other major issues which need both technical expertise and popular participation?

<sup>135</sup> See Duendaen Nikomborirak, "Monopoly and Inequality in the Business Sector", Seminar paper, Thailand Development Research Institute Yearend Seminar, Bangkok, 25-26 November 2009. (T)

## MANAGING RAPID CHANGE TO AN AGEING SOCIETY

*Thailand has entered a very rapid transition into an ageing society. The systems to cope are in preparation but the speed will create many challenges.*

### Voices from the project discussions

“The old are being abandoned as our society becomes more commercialized. In the village people are still more together, more cooperative. But in the town it is different. The 500 baht [pension] is nowhere near enough. Besides, the old need warmth, need security. The cure is to make sure their children and grandchildren have economic security, and the time to spend on the old.”

### A rapid transition

Due to better living conditions and health care, Thai people are living longer. Life expectancy at birth is presently 70.6 years for men, and 77.5 years for women. These are projected to rise to 73.3 and 80.1 years respectively by 2015-20.<sup>136</sup>

Thailand is about to make a rather rapid transition to an ageing society.<sup>137</sup> The bulge in the population, which appeared when some major communicable diseases were controlled in the mid-twentieth century, is about to reach its senior years, while birth rates have been only a little above replacement level for a couple of decades. Over the past two decades, the proportion of older persons (60 and above) has grown from 5.4 percent to 10.9 percent of the population. Over the next two decades, the proportion is expected to double again to over 20 percent. The dependency ratio (the number of persons aged 15-59 for each person of 60 and above) has dropped gradually from 11.3 to 6.5 over the last 50 years, but it is now predicted to slump to 2 over the next 25 years.<sup>138</sup>

### Traditions on trial

At present, the society still looks after its elderly in traditional ways. In short, children and grandchildren see it as their duty to care for the elderly, and most people expect to be looked after by their children in old age. This responsibility is deeply embedded in the culture. But this arrangement is coming under strain as the society becomes more urbanized. Families fragment into nuclear units. More women enter the labour force in jobs which make it difficult for them to provide care for the elderly. This strain is bound to increase as the ratio of elderly dependents to economically active family members changes rapidly over the next few years.

Over the past two decades, the proportion of older persons living with their children has dropped from 77 to 59 percent. However, another 11 percent have their family living adjacent to them. Those living alone or with a spouse are 8 and 16 percent respectively, and half of those have children living close by.<sup>139</sup> The number of older persons living completely alone is still small but is growing. The proportion doubled from 3.6 percent in 1994 to 7.5 percent in 2006.<sup>140</sup>

Only 3 percent of older persons have no monthly contact with their family. In 2007, 87 percent had some financial support from family members over the year. A third of those not living with their family still receive food from them on a weekly basis.

But family support is gradually becoming technically more difficult owing to migration and changes in lifestyle. In 2007, as many as 88 percent of the elderly claimed that they look after their daily needs themselves.<sup>141</sup> One-in-four older persons reported that they had nobody to care for them if they fell sick.<sup>142</sup>

A high proportion of the elderly still support themselves. Over a third is still working, with half of them citing a need to maintain a livelihood. Around three fifths of the working elderly are in agriculture, and 70 percent of them earn less than 50,000 baht a year, so many still require some extra subsidy from their family members. Those that are not working rely on their children for almost three quarters of their income support, and also receive other transfers in kind (food and clothing).<sup>143</sup>

<sup>136</sup> NSO, *Core Social Indicators of Thailand, 2008*, p. 5 (T).

<sup>137</sup> NSO, *Survey of Older Persons in Thailand 2007* (T).

<sup>138</sup> Institute for Population and Social Research, Mahidol University, *Projection of the Thai Population, 2005-2025*, Bangkok: Edison Press Products, 2006 (T); Suthichai Jitaphankun and Sijitra Bunnag, *Older Persons in Thailand*, Bangkok: Society for Gerontology and Geriatric Medicine, 1998 (T); Pathama Wapatanapong and Pramot Prasatkun, *The Thai Population in the Future* Bangkok: Institute for Population and Social Research, Mahidol University, 2006 (T).

<sup>139</sup> NSO, *Survey of Older Persons in Thailand, 2007* (T).

<sup>140</sup> NESDB, *Report on the Assessment of Progress under the Ninth Development Plan, 2002-2006*, p. 27 (T).

<sup>141</sup> *Ibid.*

<sup>142</sup> Churnrurtai Kanchanachitra et al. *Thai Health 2005*. Nakhon Pathom: Institute of Population and Social Research, Mahidol University and Thai Health Promotion Foundation, 2005 (T).

<sup>143</sup> NSO, *Older Persons 2006: Perspectives and Reflections from Surveys*, p. 48 (T); NSO, *Survey of Older Persons in Thailand 2007* (T).

The proportion of the elderly below the poverty line in 2007 was 13.2 percent, significantly higher than the national average of 8.5 percent.<sup>144</sup>

## Preparations for transition

Preparations have begun to meet the challenges of the transition to an ageing society. A first development plan on older persons ran from 1982 to 2001. The 1997 constitution included a commitment to promoting the welfare of the elderly. To fulfil this promise, a Senior Citizens Act was passed in 2003. Under this Act, the elderly are entitled to receive free medical services, pay concessionary fares on public transport, receive occupational and legal advice from the state, and other benefits. Tax payers receive tax relief for money spent in support of their parents. Government has compiled a second development plan for the transition to an ageing society, covering the years to 2021.<sup>145</sup>

This plan is based on the view that the traditional family responsibility of caring for the elderly should be preserved and prolonged as far as possible. This responsibility has value in itself as it enhances the human dignity of the elderly. Preserving this social institution will not only moderate pressure on public resources, but also avoid institutional models of caring for the elderly. In the planned model of care for older persons, the front-line providers are the family and community, while government's role is to provide support services. The provision of these government services have been transferred to local government bodies. Many schemes have been launched to promote community networks, community savings schemes and learning activities for older persons.

## Financial support

Very few people are supported by any form of pension. Among the non-working elderly, 6.1 percent are supported by a private pension scheme, 4.4 percent by a government pension, and 3.8 percent by interest on savings. There are still around 85 percent who depend on support from their family members.<sup>146</sup>

The next generation has made very little provision for old age. In the current workforce of 36 million, around two thirds are not part of any scheme. Government employees, including teachers, qualify for pensions. For other wage and salary earners, a contributory Provident Fund scheme was created in 1987. By 2008, 2 million had become members. An old-age benefit was added to the social security scheme in 1999, and now 9 million are covered under the Social Security Fund. Contributions are made by employer and employee, and the government. Employees must contribute for at least 180 months and leave their job after age 55 to receive the pension, which is about a fifth of the average salary of the last five years in employment.

Concern has been expressed over the viability of the Social Security Fund against the background of a rapidly changing demographic profile. As presently constituted, the fund will have a positive cash-flow until 2026, but will then require some adjustment.<sup>147</sup>

As with other social security schemes, these pension systems cover only those in the formal sector, and hence miss most of those truly in need. In 1993, the Department of Welfare introduced a scheme of giving small allowances to the needy elderly. The original sum was 200 baht a month, raised shortly after to 300, and then to 500 in 2006. By 2007, 1.8 million people were beneficiaries. However, the scheme suffered from difficulties in accurately targeting the "needy" elderly qualifying for the scheme. As a result, in April 2009, this was converted into a universal scheme under which anyone over 60 can claim 500 baht per month as a right.

However, this is recognized to be only a temporary measure. For the longer term, a more viable scheme is needed for the large number of people who spend their working lives in the informal sector. TDRI made proposals for a voluntary scheme for the self-employed with monthly contributions starting at 100 baht, and government contributing half of the employee's amount.<sup>148</sup> The bill is currently under consideration.

In recent years, several community savings funds have extended into social welfare including support for the elderly. In 2006, there were an estimated 3,000 of such funds, including a famous example in Songkhla with a membership of over 100,000 people. However, these funds are greatly at risk from the changing demographic structure. The Songkhla fund is likely to face negative cash flow when it begins to pay old-age benefits in 2019.<sup>149</sup>

<sup>144</sup> NESDB, *Poverty Assessment 2007, 2008* (T).

<sup>145</sup> National Coordinating Committee for Older Persons, *2nd National Development Plan for Older Persons, 2002–2021*. Bangkok: Bureau of Empowerment for Older Persons, Office of the Prime Minister, 2002 (T).

<sup>146</sup> NSO, *Survey of Older Persons in Thailand, 2007* (T).

<sup>147</sup> Niwat Kanjanaphoomin, "Pension fund, provident fund, and social security in Thailand". Paper presented at International Conference on Pensions in Asia: incentives, compliance, and their role in retirement. 2004

<sup>148</sup> TDRI, *Research Report on Extending Basic Social Security for Older Persons*, Bangkok: Ministry of Labour, 2006 (T).

<sup>149</sup> Worawet Suwanrada, "Old-age welfare in Japan and Thailand," presentation at the National Health Foundation, 19 July 2006; *Matchon*, 11 December 2008 (T).

## Housing and health

While the strategy to preserve the tradition of family care is laudable, it is inevitable that increasing numbers of older persons will either be living alone or in families which are not in a position to give close care. The strategy of moving the government responsibility to local bodies has the advantage of making the services more accessible and flexible, but in practice means there is a great deal of variation in the quality of services provided. Some local bodies lack personnel or focus. While the government support services are supposed to help build greater self-reliance of older persons, in practice this goal is often unattained.<sup>150</sup>

The two major concerns about the current system that emerge from surveys with older persons themselves concern housing and health.

For older persons who are without family support, there is no adequate provision under the present system to ensure that they are properly housed. For older persons living with families, there is no support for any necessary modifications to housing, and often there are obstacles created by building regulations. Commercial provision of accommodation and home-help services for older persons have started to appear, but are only available to the wealthy. Undoubtedly these services will expand. At present there is no effective monitoring. Some private nursing homes register themselves with the Department of Health Services Support, but others do not bother.

As a whole, older persons welcome the easier access and reduced cost of health care provided by the Universal Health Care system. However, there are some specific difficulties. For those who are housebound, there are no provisions for extending health care to the home. For those who suffer emergencies, the procedures for referring cases for priority treatment or transfer to better equipped hospitals are not efficient.<sup>151</sup>

The conversion to an ageing society will exert added strain on the health services. The proportion of the population suffering from chronic diseases rises sharply after age 60, as does the proportion with a disability and the proneness to accidents.

## Meeting the challenge of a rapid transition

Preparations for the transition to an ageing society are now in their second decade. Government agencies have collected a lot of data, set policy, made legislative provisions, drawn up plans, and created frameworks for cooperation with civil society. Even so, the rapidity of the coming transition will present many challenges. The basic approach, which relies heavily on family and community, has many benefits for all parties. But efforts will be needed to fine-tune the respective roles of government, community, and family, and to ensure that all older persons are properly provided for.

Ensuring sufficient income is the most crucial issue. Government is currently considering schemes to provide voluntary coverage for 24 million people in the informal sector. Undoubtedly, this will be a difficult decision to take, a difficult scheme to finance, and a difficult project to manage over the long term. The problems should not be underestimated. Crafting a sustainable scheme will increase the economic security of a large proportion of the population.

The high proportion of the elderly still below the poverty line should be targeted under a specific programme.

More needs to be done to keep the elderly active and productive. In many sectors, the retirement age could be extended, and more flexible working arrangements introduced. Government might also look at the experiences of other countries in employing the active elderly in public projects. Programmes are needed to promote health awareness and preventative practices.

The health care system will face the biggest challenge. The changing demographics will put great pressure on the Universal Health Care system, especially on local and community hospitals. A large proportion of the elderly live in rural areas where there are problems of access and transportation. There is a shortage of nurses and doctors specialized in geriatric medicine.

These problems are well known. The issue will be the commitment of adequate resources to meet them.

<sup>150</sup> Narirat Jitmontri and Sawitri Tayansin, *A Review of Knowledge and Strategy on Welfare Systems for Older Persons in Thailand*, Bangkok: Thai Health Promotion Foundation, n.d. (T).

<sup>151</sup> *Ibid.*

## UNDERSTANDING CLIMATE CHANGE AND ITS CONSEQUENCES

Climate change is already impacting human security, particularly through more extreme patterns of rainfall. In the near future, the impact will increase. Over the last three years, we have learnt a lot more about the prospects for climate change in Southeast Asia through better research and more sophisticated projections for the future. But there are still many gaps in the knowledge, and little attention has been paid to the implications for human security. This section provides only a brief sketch of a complex topic. But it is necessary to flag its importance, not only because of the low levels of awareness at present among government agencies as well as among the public at large, but also because of the multiple implications for human security.

### Thailand as a contributor

In terms of carbon emissions, Thailand is an average world citizen. According to the UN Human Development Report 2007/2008, Thailand has roughly 1 percent of the world's population, and accounts for just under 1 percent of carbon emissions. Between 1990 and 2004, Thailand's total emissions almost tripled – the second largest rate of increase in the world. As an emitter, Thailand ranks 22nd in the world.<sup>152</sup>

That increase has largely been a product of rapid economic growth. But it is also a result of large inefficiencies. Thailand produces higher emissions than other countries at a similar income level. The worst inefficiencies are in power generation and transport. There has been too little investment in public transport, and too much reliance on fossil fuels. The carbon intensity – the ratio between carbon emission and GDP size – has increased rapidly (see Figure 3.8).

According to current projections, Thailand's emissions of all greenhouse gases is expected to rise sharply in the immediate future, growing by 3.6 percent a year over 2010-20.

A major part of this increase will be contributed by power generation. The government's original Power Development Plan for 2007-21 almost doubles the usage of coal, the worst option from the point of view of carbon emissions. In the plan's base case, carbon emissions from Thailand's power generation almost double from 66 to 128 million tons a year.<sup>153</sup>

Under the Kyoto Protocol, Thailand was classified as a developing country exempt from obligations to reduce its emissions. In the near future, the Kyoto Protocol is likely to be replaced. In light of the predictions by the UN Intergovernmental Panel on Climate Change, (UNIPCC) any new international agreement is likely to impose restrictions on all countries. Given Thailand's track record as a growing emitter, the restrictions imposed on the country may be quite stringent. At present, Thailand's economic planning, and especially its energy planning, takes little account of this possibility.

More recently, the Alternative Energy Development Plan has been adjusted to raise the contribution of renewables from the current 6.4 percent of energy use to 14.1 percent in 2022, and of all alternative sources from 7.3 to 20.3 percent by providing investment grants, research subsidies and special tariffs. The plan expects to reduce carbon dioxide emission by 42 million tons/year.

### The probable future

**Temperature.** The average temperature in Southeast Asia has increased by 0.1 to 0.3°C each decade over the past half century.<sup>154</sup> The trend has accelerated recently. In Thailand since 1951, the average minimum temperature has risen by 1.35°C and the average maximum by 0.35°C. In the near future, this acceleration is probably going to increase. According to models developed locally, the mean daily maximum temperature in Thailand will increase by 2°C to 4°C by 2070. While in the recent past, the greatest warming has been during the cool season, in future it will happen in the hot season too. There will be more heat-waves, and fewer cool days.

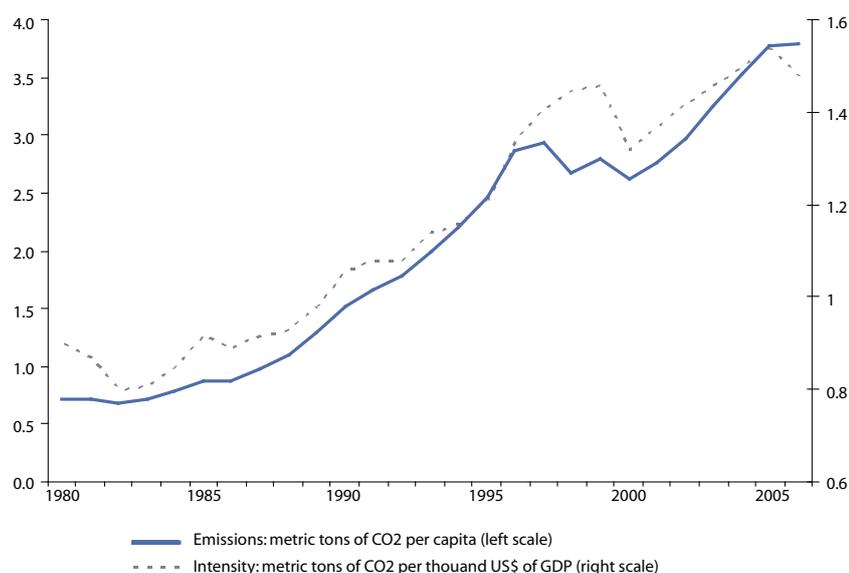
**Rainfall.** Over past decades, there is no clear trend of change in average annual rainfall, but the variation from year to year, and place to place, has become more extreme. Dry years are drier, wet years are wetter. Some regions are swamped while others are scorched. Tropical storms have become more intense, though not more frequent.

This trend is also set to intensify. Overall the models suggest that average rainfall will decline slightly

<sup>152</sup> UNDP, *Human Development Report 2007/2008, Fighting Climate Change: Human Solidarity in a Divided World*, New York: UNDP, 2007, Appendix Table 1.1, p. 69.

<sup>153</sup> Chalothon Kaensantisukmongkhon, 'Renewable energy and alternatives for Thai energy', *Symposium No. 31*, proceedings of annual seminar on the world energy situation and Thailand's adjustment, Faculty of Economics, Thammasat University, 9 July 2008.

<sup>154</sup> This section is compiled with information from ADB, *The Economics of Climate Change in Southeast Asia*, 2009; UNDP *Human Development Report 2007/2008: Fighting Climate Change*; Somrudee Nicro and Matthew Markopoulos, *Environmental Security in Thailand*; *Bangkok: Thailand Environment Institute*, 2009; and data from World Wildlife Fund Thailand.

**Figure 3.8 Carbon dioxide emissions and carbon intensity, 1980-2006**

Source: International Energy Annual Report 2006

through to mid-century, but then begin to increase. On average, annual rainfall will increase by 5 to 25 percent by late this century. More strikingly they predict that the variations from year to year and place to place will become more erratic. Storms will increase in frequency and intensity. That means more floods, more droughts, more landslides, and more forest fires.

*Sea level.* The level of the sea has risen at a rate 1-3 mm a year over the past half-century. Combined with the impact of more intense storms, coastal areas have been eroded, and stretches of defensive mangrove destroyed.

The sea will continue to rise, but there are great disagreements over the rate. At a minimum, it will be 40 cm higher by the end of this century, but that

could rise to a metre or more depending on the melting of ice sheets and glaciers.

The rise of sea levels will swamp coastal areas, particularly on the eastern coast of the peninsula. It will also increase seasonal flooding in Bangkok and other towns. The OECD ranked Bangkok as seventh in the world among coastal cities where climate change will affect people and property.<sup>155</sup>

The seacoast along the upper Gulf of Thailand between the Thachin and Bang Pakong rivers has already become severely eroded. In Phra Samut Chedi district of Samut Prakan province, the sea is advancing at 25 metres a year. In Bangkok's Bangkhunthien district, the rate is only fractionally slower. Village settlements and cultivated areas have been abandoned (see Table 3.4).

**Table 3.4 Areas facing severe coastal erosion problems**

Degree of severity	Distance (kilometres)	% of the seacoast	Notes
<b>Severe erosion (above 5.0 metres per year)</b>			
Gulf of Thailand	180.9	10.9	12 provinces: Chantaburi, Rayong, Chachengsao, Samut Prakan, Bangkok, Phetchaburi, Prachuap Khiri Khan, Surat Thani, Nakhon Si Thammarat, Songkhla, Pattani, and Narathiwat
Andaman Sea	23	2.4	5 provinces: Ranong, Phuket, Krabi, Trang, and Satun
<b>Medium erosion (1.0-5.0 metres per year)</b>			
Gulf of Thailand	305.1	18.4	(no details)
Andaman Sea	90.5	9.5	(no details)

Source: Thanawat Jaruphongsakun, Papers on "Coastal Erosion in Thailand: Problem and Strategies for Management," Research Unit on Disasters and Spatial Information, Faculty of Science, Chulalongkorn University, 2006. (T)

<sup>155</sup> R. Nicholls et al., *Ranking Port Cities with High Exposure and Vulnerability to Climate Extremes: Exposure Estimates*. OECD Environment Working Paper 1, 2007, [www.oecd.org/env/cc/cities](http://www.oecd.org/env/cc/cities), accessed 10 June 2009.

In total some 200 kilometres of coastline are suffering erosion from the upper Gulf down the eastern coast of the peninsula. Some of the other most critical areas are Pak Phanang district of Nakhon Si Thammarat, and Tak Bai of Narathiwat.

### Gaps and uncertainties

There are still some important things that we do not know about the physical impact of climate change. For example, there is little known about the oceanic effects on climate, and how these might change. The sun warms the earth most in the tropics. That heat is circulated elsewhere by massive sea currents. Nobody is sure how these might change. Because the Gulf Stream in the Atlantic is crucial to keeping Europe warm, there has been some significant research on that topic, and the results are cautiously optimistic. But on the Nino-Nina effect, very little is known. The current is interlinked with the monsoon, but how this whole complex will be affected by global warming, nobody seems to know.

Global warming is already melting the Himalayan glaciers which feed all the great rivers of Asia, including the Mekong and Salween. As this melting gets worse, the river flow will initially increase, contributing to floods. Later the flow will diminish, exacerbating off-season droughts. This is another area where predictions are vague, but the potential consequences are highly devastating.

### Implications for human security

Research on climate change in this region is still at an early stage. Basic variables in terms of temperature, rainfall and sea levels have only started to become somewhat clearer in the last 12 months. Timing is still very vague. Research to identify those most at risk is only just beginning.

Even so, the multiple implications for human security are already in view. It is now emerging that the first impact of climate change on a global scale will be on food supplies, with major consequences for human security. More extreme weather patterns will reduce crop yields and increase the frequency of crop failures. The effects are already apparent in vulnerable regions, especially in Africa.<sup>156</sup>

In Thailand, two of the major food sources will be directly affected. Rice yields are predicted to fall by 10 percent for every 1 percent rise in minimum

temperature during the growing season. Rising temperatures will also bring more of the bacteria which cause plant diseases. Freshwater fish stocks will be severely hit by the shrinkage of wetlands, and the changes in migration.

These predictions emphasize the critical importance of paying more attention to water management and to agricultural policy in general. This will be important for food security, but can also contribute in other ways. If the strain on world food supplies pushes up world food prices, Thailand will benefit economically because of its comparative advantages in food production. Moreover, based on past records, rising returns to agriculture are the single most important variable for reducing poverty and inequality.

The second major global impact of climate change on human security will be in the area of health through increasing heat stress, and shifts in the geographical patterns of disease.

In Thailand, higher temperatures can be expected to increase the incidence of heat stress, fevers including dengue and bacterial infections including diarrhoea. Higher temperatures will cause more forest fires and consequent haze problems. More extreme climate will cause more deaths and injuries from natural disasters.

### Indirect impacts

There is another aspect which currently receives much less attention. The initial impacts of global warming on Thailand will not come so much from the direct physical changes, as from the social and economic overspill from elsewhere. Two probable changes are shifts in crop markets and increasing volumes of migration.

Climate change will affect markets long before it affects sea levels in any dramatic way. These market shifts have the potential to increase risks and impact on human security. The sudden shifts in crop prices in 2008 hint at what may lie in store. Thailand needs a clear policy on food and fuel crops.

Thailand is surrounded by places that are highly vulnerable to climate change. Bangladesh faces the same rainfall changes, ocean rise, and glacier-melt effects detailed above. But because it has a 100 million people practicing precarious agriculture a few centimetres above sea level in the delta of a great Himalayan-glacier-fed river, the impact is potentially massive.

<sup>156</sup> Oxfam International, *Suffering the Science: Climate Change, People and Poverty*, July 2009, [www.oxfam.org/en/policy/bp130-suffering-the-science](http://www.oxfam.org/en/policy/bp130-suffering-the-science), downloaded 15 July 2009.

Other nearby regions are also at risk. Viet Nam's rice bowl in the Mekong delta is similarly vulnerable. Nobody knows what will happen to the delicate flows of the Tonle Sap which sustain Cambodia's agriculture and fisheries. Northwest China, which already has a severe water shortage, is also destined for higher temperatures and lower rainfall, and hence will be another early disaster zone.

As a consequence, Thailand may be affected by large population shifts in neighbouring areas. Some preparation is needed. The arrival of a few hundred Rohingya boat people on Thailand's western coasts in early 2009 resulted in the country being accused in the international press of perpetrating human rights abuses. Coping with the human consequences of massive policy shifts will be best dealt with through regional and international cooperation.

### **Awareness and action**

The biggest challenge for Thailand on climate change is to translate emerging awareness and concerns into active actions.

Many people in Europe and the USA have come to accept climate change, not because of the scientists or Al Gore or the UN IPCC, but because they can see and feel the effects for themselves. It really is warmer. The plant and animal life around them is changing. The weather patterns have become more wayward. In Thailand, as in much of the tropics and sub-tropics, the day-to-day evidence of climate change is not so clear, and hence people are not so aware of the issue. Coastal dwellers can begin to detect a change in sea levels. Naturalists have begun to find adaptation and migration by some fauna. There is a growing impression that climatic fluctuations are becoming more extreme. But at present this concern is limited. The UN Climate Change Conference in Bali in late 2007 attracted little interest from the Thai press.

Outside the academic circle, a few NGOs are interested in climate change. One example is the Thailand Environment Institute (TEI). It advises firms on how to use energy more efficiently. It raises awareness among schoolchildren and contributes to research. Another example is the Good Governance

for Social Development and the Environment Institute (GSEI). In collaboration with Thailand Research Fund, the Multilateral Environmental Agreements Unit was established in 2007 to produce and disseminate knowledge and as well as to advocate policies on climate change and related issues. But the impact of such NGOs is limited by their size, their funding, and the society's interest.

In general, the issue of climate change has relatively low awareness among the general public in Thailand, and is a low priority for government agencies.

### **Approaching the response to climate change**

The government set up a national committee on climate change in 2006, and is now engaged in compiling a master plan on the subject. Every ministry concerned appoints a high-level officer as the Climate Change Officer (CCO). In practice the fate of any proposals will depend crucially on public awareness and support. Hopefully the publication of the master plan will stimulate greater interest and debate. Perhaps the national committee should establish a national team to develop public awareness. Such a team should include representatives of relevant agencies, along with members of civil society, and (crucially) professional communicators.

Thailand's energy planning does not anticipate likely global agreements on the reduction of carbon emissions. Early action will lessen the impact.

The issue of managing the production of fuel and food fell off the national agenda as soon as the prices returned to more normal levels. It needs to be brought back onto the agenda as a matter of urgency. A long-range policy needs to be developed through participation of all relevant parties, with attention paid to the possible effects of future shifts in the market.

Strategies for coping with climate change-induced migrants also need to be properly addressed so that any radically increased flows of displaced persons can be dealt with in a proper international context.

## **TAILPIECE: SHIFTING WORLD, SHIFTING PROBLEMS, SHIFTING OPPORTUNITIES**

Thailand is in transition with old problems of human security in retreat, while new problems arise as a result of the society's growing prosperity and complexity. The world faces a transition of massive proportions in the face of climate change.

The six issues highlighted in this chapter are separate but also tightly interrelated. Perhaps the most critical connection is that linking water management, the future of the farmer, climate change, and inequality. The linkage between these factors presents Thailand with many threats, but also massive opportunities.

If Thailand can secure its agricultural future by managing water well, and enhancing the security and productivity of the small-scale farmer, it will safeguard food security against the threat of climate change, but also enhance human security in other ways. Increased agricultural production at a time of rising world agricultural prices will allow Thailand to leverage its comparative advantage to enhance economic security in general. Moreover because rising agricultural revenues are the single most effective variable to benefit the poorest and weakest groups in society, this will be a major contribution to alleviating economic inequality and hence enhancing political security.

In short, there is a win-win-win-win scenario, but it depends on serious attention to water and to agriculture.

## 4. A short-list for action

There is little doubt that human security in Thailand has improved greatly overall in the past generation. However, some problems remain, some groups are still at risk, and new threats are emerging as a result of changes both within Thailand and in the world as a whole. The responsibility for addressing these issues does not belong to government alone but to society as a whole. The challenge is to identify the key issues, and create mechanisms which draw on the best resources of the country for meeting each problem. Here we propose a short-list of key initiatives which we think can contribute most to the advancement of human security in Thailand in the short and medium term. The choice of initiatives reflects inputs from the provincial discussions, but also the judgement of those compiling this report.

### **Act now to ensure adequate support for older persons over the long term**

Like many societies, Thailand faces an imminent transition to an ageing society. Where Thailand differs from many other countries is in the speed of the transition, due to the country's demographic profile. The issue is not going unattended. Several studies have been made. A long-range plan has been compiled. Mechanisms for cooperation with civil society organizations are in place.

The major issue is adequate financial support for older persons. Thailand is lucky in having a strong tradition of care for the elderly. The risk is that it may rely on this too heavily. The delicate task is to provide suitable support mechanisms without undermining existing traditions in any way.

There are three priorities. First, the long-term viability of the funding for old age support under the social security system for the formal sector must be secured. This sounds simple yet many other countries have run into difficulties because of inadequate forward planning. Second, proper provision must be made for those working in the informal sector. This may need a multi-pronged approach, including a voluntary contribution scheme (as is currently under consideration), more encouragement for private saving as a provision for old age, and support for community welfare funds. This may require cooperation from the private financial sector as well as campaigns of awareness. Third, a safety net needs to be devised for older persons who find themselves bereft of adequate support.

### **Plan now to ensure adequate staffing of public health services**

The introduction of universal health care marks a major advance in human security in Thailand. As the experiences of many other countries have shown, sustaining such services is not easy. In Thailand it will be difficult because of budget pressures, the ageing of the society, and new patterns of disease. It is already clear that one major issue for sustaining the system is the retention of adequate numbers of medical professionals. Competition comes both from private health services and from "medical tourism." In the future, this competition is likely to increase rather than diminish.

Planning is needed to ensure an adequate staffing of public health services over the short and medium term. This planning will have to cover medical education, remuneration, and other related issues.

### **Make strengthening the security of those in the informal sector a specific target of policy making**

Over the past generation, the social security of those working in the formal sector has improved greatly, while provisions for the 24 million working in the informal sector remain sketchy. It is unrealistic to expect matters to change through rapid conversion of the workforce from informal to formal. It is time to address the security of those in the informal sector as a specific target of policy.

Community savings schemes, welfare schemes, and occupational groups have proliferated over recent years. Government has been supportive, but with limitations. Government should rethink the institutional backing needed to make community institutions stronger and more durable, and should increase the level of funding to ensure that community institutions can improve the social and economic welfare of their members.

### **Move to reduce the social acceptance of domestic and sexual violence by raising public awareness and restraining the media**

In recent years there has been growing awareness of the scale of domestic and sexual violence, mostly concealed by a culture of non-disclosure.

Women – and especially young women – face unacceptable levels of risk to their personal security.

Recent institutional provisions and legislative innovations are moves in the right direction. But more needs to be done to shape public attitudes. Public campaigns are needed to deter the practice of violence, and to ensure that victims are discovered and cared for. In particular, efforts are needed to restrain the media and entertainment industries' exploitation of violence against women which tacitly legitimizes unacceptable practices. These industries should be invited to cooperate with the enforcement of stricter codes of conduct, or else face stronger legal constraints.

### **Deliver on the commitment to eliminate human trafficking**

Over recent years, government agencies have become much more firmly committed to eradicating human trafficking. New legislation, institutions, and international agreements have created the means to seriously combat the traffickers. The task now is to put these tools to use. Thailand should set a target of achieving Tier 1 status within five years.

### **Broaden the framework of policy-making on migrant labour**

The semi-permanent population of migrant labour is now of a scale that has many implications for human security. It places new demands on the provision of infrastructure and public services. It has begun to excite concerns over human security issues in some sections of the host community.

Policy-making on migrant labour has concentrated on issues of legality, security, and economy. To manage the human security implications of the presence of this large population, this framework needs to be extended.

On the one hand, Thailand will benefit if the migrant labourers feel properly treated and are well disposed towards the host country. On the other hand, members of the host community need to be assured that their own interests are not prejudiced by the presence of such a large number of migrants. This will require a framework of policy-making to ensure adequate provision of infrastructure and facilities, including housing, health services, and education,

in areas with large concentrations of migrants. It will also require more participation in this policy-making framework both by representatives of migrant communities, and by representatives of host communities. This framework will need to operate at both national and provincial levels.

### **Manage the balance between fuel and food crops with the aim of promoting the interests of the small-scale farmer**

Resolving the potential conflict between food and fuel crops is important for food security. How the issue is resolved may be critical for the small-scale farming sector – with many other implications for human security.

Any system for zoning crops should be devolved to the provincial and local levels to ensure adequate participation in the decision-making. Government agencies should provide support for the production of fuel crops within small-scale farming systems. Such support should include research and development and dissemination. At the same time, a much greater effort is needed to improve the productivity and profitability of small-scale rice farming since this one project has implications for food security, economic growth and equity.

### **Launch a wide-ranging process to overhaul water management**

Water is now recognized to be in crisis on a world scale. In Thailand, it is arguably the single most important issue for human security in many aspects – food, health, economy, and environment. Many varied problems over quality and quantity have been accumulating over recent years. Climate change will shortly exacerbate many of these problems. The challenge now is to confront the issue in an integrated way and on the scale that the issue requires. Some body, perhaps independent of existing agencies involved in water management, should be tasked with preparing a comprehensive plan on water management, covering issues of supply, distribution, and quality, with a time scale of several decades. The process must incorporate mechanisms for consultation with and participation by stakeholders and civil society in general. It must also have the resources to draw on the best technical inputs available, both locally and internationally.

### **Strengthen environmental management by incorporating new knowledge and techniques in a revision to the primary legislation**

The condition of the environment has many consequences for human security, particularly for some of the most vulnerable groups and communities who are highly dependent on natural resources.

Since the passage of the 1992 Environment Act, Thailand's environment and environment-related problems have changed quite dramatically. Internationally, there have been many innovations in approaches to environmental management. Thai government agencies have introduced many new principles and techniques. It is time for a major advance in environmental management by updating the principal legislation. This legislation should activate the environment-related rights which are granted by the constitution. It should provide legislative backing for general use of innovations such as strategic environmental assessments, and prescribe tighter procedures for project planning and review. It should provide more effective mechanisms to enable people to enforce the principles enshrined in the constitution and legislation without undue cost and delay.

### **Put the goal of an equitable society on the national agenda, and make a start with some basic reforms**

Thailand's high level of economic and social inequality diminishes the human security of large sections of the population in many ways. Overcoming this inequality will be a long-term project, but it needs to start.

It is time to identify the goal of diminishing inequality and moving towards an equitable society as a key part of the national agenda. To show commitment and put some momentum behind this objective, government should undertake some basic reforms

which are easily within its competence. It is widely known that both the gathering and spending of government revenues tend to reinforce inequalities. The tax system should be overhauled to diminish the importance of regressive taxes, and to introduce innovations (such as land taxes) which may have a positively pro-equity impact. Similarly, spending should be overhauled to target both the poorer geographic regions and the poorer social groups. Other measures could include changes in order to properly implement the existing anti-monopoly legislation.

### **Reduce political conflict by making the government more open and accessible**

To a large extent the growing level of political conflict at the national level signals a general failure of the political system to act as a mechanism for the resolution of the new stresses and strains which arise as a result of society becoming more prosperous and more complex.

To resolve this issue in the long term, the political system must become more open and more responsive. More and better channels are needed for influencing policy-making in its early stages. Decentralization should be allowed to fulfil the aim of moving more issues closer to the people where they can more easily be resolved by participation. The public media could play a much greater role in airing dissent and serving as a platform for debate on public issues.

One final lesson of this review of human security in Thailand is that the issues and priorities of human security are always changing in response to local developments and worldwide change. The pressure on natural resources, and the multiplication of political conflicts have dramatically changed the problems and priorities over recent decades. Climate change will change them again over coming decades. So too will problems not yet anticipated. Advancing human security requires constant vigilance.

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# Part I

# Human Development by Human Achievement Index

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**Annex 1: Data Tables**

**Annex 2: Data Sources**

# 1. Human Development and Human Achievement Index

**The Human Achievement Index (HAI), introduced by UNDP Thailand in 2003, is the first human development index at the provincial level that provides an overall assessment of the human development situation.** It is a useful tool for capturing disparity patterns at a level that allows for relevant policy-making and effective operational undertakings. As a composite index, HAI provides an overall ranking of provinces that should be understood as indicative, not definitive, of levels of overall development.

## HAI structure and data

**HAI is composed of eight indices, based on 40 indicators.** It follows a human's lifecycle, starting with the earliest essential that everyone requires from the first day of life – health – followed by the next important step for every child – education. After schooling, one gets a job to secure enough income, to afford a decent housing and living environment, to enjoy a family and community life, to establish contacts and communication with others, and, last but not least, to participate as a member of society.

**Data are the most formidable challenge. HAI uses secondary data that do not require laborious processing. But the data must have national coverage with provincial disaggregation.** Most data are from surveys that are conducted every 2-3 years. Most administrative data are updated annually. For survey data, data are certainly less reliable at the provincial level than national level due to small sample size.<sup>1</sup> Common problems among administrative data are incomplete data coverage, biased data collection and reporting and so on. It should also be noted that ethnic minorities and non-registered migrants, are not included in official statistics used in the calculation of HAI.

## HAI methodology

HAI applies the same methodology used in the calculation of the Human Development Index (HDI). For each indicator, the following calculation is used for every province:

$$\frac{\text{Actual value} - \text{Minimum value}}{\text{Maximum value} - \text{Minimum value}}$$

The minimum and maximum values for each indicator are set slightly wider than the observed values to serve as "goal posts" for that indicator in the next ten years. The goal posts set for each indicator are shown in Table 1.

For some indicators such as unemployment or occupational injuries, the data reflect "negation in human development." Hence, HAI uses the inverse value (1 – calculated value) to show the degree of progress.

HAI does not divide the provinces into predetermined groups. It allows the 76 provinces to fall into different positions, hence there can be as many as 76 positions on each indicator. The variation at the high and low ends are captured and treated in the same manner. As a consequence, a very good performance on one indicator can offset a very poor performance on another.

Weighting is not applied at any level of the calculation. The Health Index for example is an average of all seven health indicators. Likewise, all eight indices carry equal weight in calculating the composite HAI.

<sup>1</sup> The reliability of the provincial survey data is of lesser concern for first-level questions. It is more problematic for second or third level questions as the number of samples drop. For example, for a province with 300 samples, 200 respondents may answer "yes" to the question "Does your household have any kind of debt? The total number of samples for the next question "What kind of debt – consumption, investment, house or land mortgage?" drops to 200. The third level question to those who have consumption debt will be asked to less than 200 respondents. HAI is largely based on data from first-level questions.

**Table 1: HAI structure, goal posts, and data**

HAI Index	Component	Indicator	Min value	Max value	Data source/Data year
<b>1. Health</b>	1. Quality of life	1. Underweight births (%)	6	30	Bureau of Health Policy and Strategy, Ministry of Public Health, 2007
		2. Population with physical illness (%)	3	45	Health and Welfare Survey, National Statistical Office, 2007
		3. Population with disability and/or impairment (%)	0	9	Disability Survey, NSO, 2007
		4. Population with mental illness (per 1,000)	2	155	Department of Mental Health, 2007
	2. Health promotion	5. Unhealthy behaviour (%)	14	67	Smoking and Alcohol Consumption Survey, NSO, 2007
		6. Population that exercise (%)	9	68	Survey of Exercise Behaviour, NSO, 2007
	3. Health infrastructure	7. Population per physician (persons)	572	11,922	Bureau of Health Policy and Strategy, MoPH, 2007
<b>2. Education</b>	4. Stock of education	8. Mean years of schooling for people aged 15+ (years)	3	13	NSO, 2007
	5. Flow of education	9. Gross upper-secondary enrolment (%)	31	134	Ministry of Education, 2007
	6. Quality of education	10. Average score of upper-secondary students (%)	26	59	O-Net Test Scores, National Institute of Educational Testing Service (public organization), 2007
	7. Educational infrastructure	11. Upper-secondary students per classroom (students)	23	54	Ministry of Education, 2007
<b>3. Employment</b>	8. Employment	12. Unemployment (%)	0	5	Labour Force Survey, NSO, 2007
		13. Underemployment (%)	0	24	Labour Force Survey, NSO, 2007
	9. Labour protection	14. Employees covered by social security (%)	1	100	Social Security Fund, 2007
		15. Occupational injuries (per 1,000 workers)	2	65	Social Security Fund, 2007
<b>4. Income</b>	10. Income level	16. Household monthly income (baht)	5,434	48,775	Household Socio-economic Survey, NSO, 2007
	11. Poverty	17. Poverty incidence (%)	0	81	NESDB, 2007
	12. Debt	18. Households with debts (%)	11	100	Household Socio-economic Survey, NSO, 2007
	13. Disparity	19. GINI	27	74	Poverty Map, NSO, 2007
<b>5. Housing and Living Environment</b>	14. Housing security	20. Households living in own house and on own land (%)	16	100	Household Socio-economic Survey, NSO, 2007
	15. Basic appliances	21. Households with a refrigerator (%)	31	100	Household Socio-economic Survey, NSO, 2007
		22. Households cooking with gas or electric stove (%)	13	100	Household Socio-economic Survey, NSO, 2007
	16. Living environment	23. Population affected by drought (%)	0	51	Department of Disaster Prevention and Mitigation, 2007
		24. Population affected by flood (%)	0	87	Department of Disaster Prevention and Mitigation, 2007

**Table 1: HAI structure, goal posts, and data (continued)**

HAI Index	Component	Indicator	Min value	Max value	Data source/Data year
<b>6. Family and Community Life</b>	17. Family life	25. Children in distress (per 1,000)	0	385	NRC 2C, Community Development Department, 2007
		26. Working children aged 15-17 (%)	1	54	Labour Force Survey, NSO, 2007.
		27. Single-headed households (%)	8	33	Labour Force Survey, NSO, 2007
		28. Elderly living alone (%)	2	20	Survey of Older Persons, NSO, 2007
	18. Safety	29. Violent crimes reported (per 100,000)	1	79	Royal Thai Police, 2007
		30. Drug-related arrests (per 100,000)	32	1,215	Royal Thai Police, 2007
<b>7. Transport and Communication</b>	19. Transport	31. Villages with all-seasoned main roads (%)	25	100	NRC 2C, Community Development Department, 2007
		32. Vehicle registration (per 1,000)	57	1,217	Department of Land Transport, 2007
		33. Land traffic accidents (per 100,000)	5	1,020	Department of Disaster Prevention and Mitigation, citing Royal Thai Police, 2007
	20. Communication	34. Households with access to TV (%)	44	100	Household Socio-economic Survey, NSO, 2007
		35. Population with mobile phone (%)	9	90	Household ICT Survey, NSO, 2007
		36. Population with internet access (%)	5	37	Household ICT Survey, NSO, 2007
<b>8. Participation</b>	21. Political participation	37. Voter turnout (%)	50	100	National Election Committee, 2007
	22. Civil society participation	38. Community groups (per 100,000)	3	381	Community Organisations Development Institute, 2007
		39. Households participating in local groups (%)	62	100	Basic Minimum Needs, Community Development Department, 2007
		40. Households participating in community activities (%)	64	100	Basic Minimum Needs, Community Development Department, 2007

### Box 1: New features in HAI 2009

HAI 2009 is the third generation of HAI; the first HAI was introduced in 2003, the second in 2007. Each generation presents some minor changes. Ideally, progress over time should be tracked by the same set of indicators. But the unavailability of data posts a significant challenge. In some cases, data used in the past calculations are no longer available. In others, new and more relevant data series have been introduced.

To keep the HAI dynamic and relevant to the state of human development in Thailand, HAI incorporates minor adjustments, while adhering to the original concept, overall structure and methodology.

#### Here are the changes introduced by HAI 2009:

**Health:** Indicator “New AIDS cases” is dropped as the figures have dwindled drastically since 2008. Indicator “Population that exercise” is added to give more weight to health promotion.

**Education:** For measuring educational quality and infrastructure, the lower-secondary level is replaced by the upper-secondary level as mandatory education has boosted lower-secondary enrolment in all areas. Also, for measuring the quality of education, national assessment test scores at the lower-secondary level are replaced by O-Net average scores at the upper secondary level.

**Employment:** No changes.

**Income:** GINI is added to reflect income disparity.

**Housing and Living Environment:** Indicator “Households not affected by pollution” is dropped as there is very little variation among provinces. Besides, data covered only rural households.

Indicator “Population affected by drought and/or flood” is split into two indicators “Population affected by drought” and “Population affected by flood”, to add more weight to the impact of natural disaster.

**Family and Community Life:** Replace indicator “Orphans” with “Children in distress” to cover orphans, abandoned children, children affected by AIDS and children with no birth certificate.

**Transport and Communication:** Indicator “Road surface” is dropped to reduce the excessive emphasis on “road and vehicle” mode of transportation. Besides, the figures remained largely unchanged over the years.

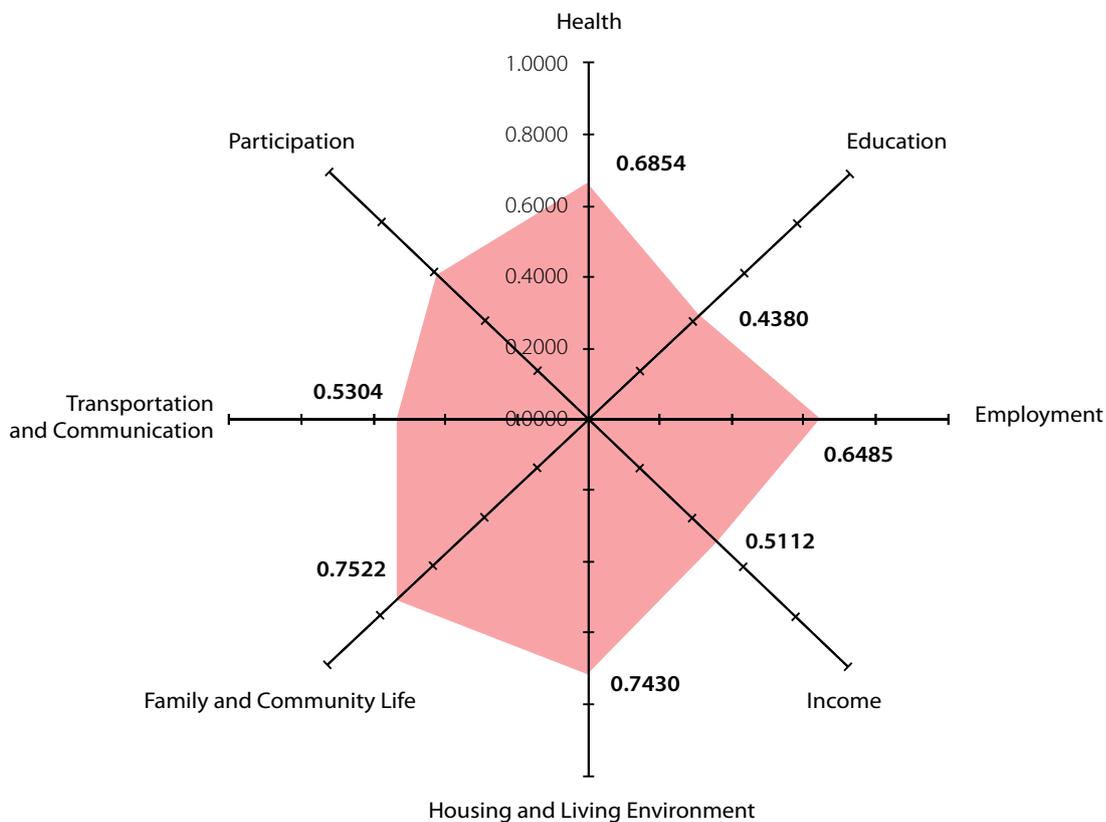
**Participation:** Indicator “Hours participating in social services and unpaid services for other households” is replaced by “Households participating in community activities” due to data constraints.

Another technical change is to widen the “goal posts” to accommodate changes in the next ten years. Previously there was a 10% margin (0.9 of the observed minimum, and 1.1 of the observed maximum) and this has been changed to 25%.

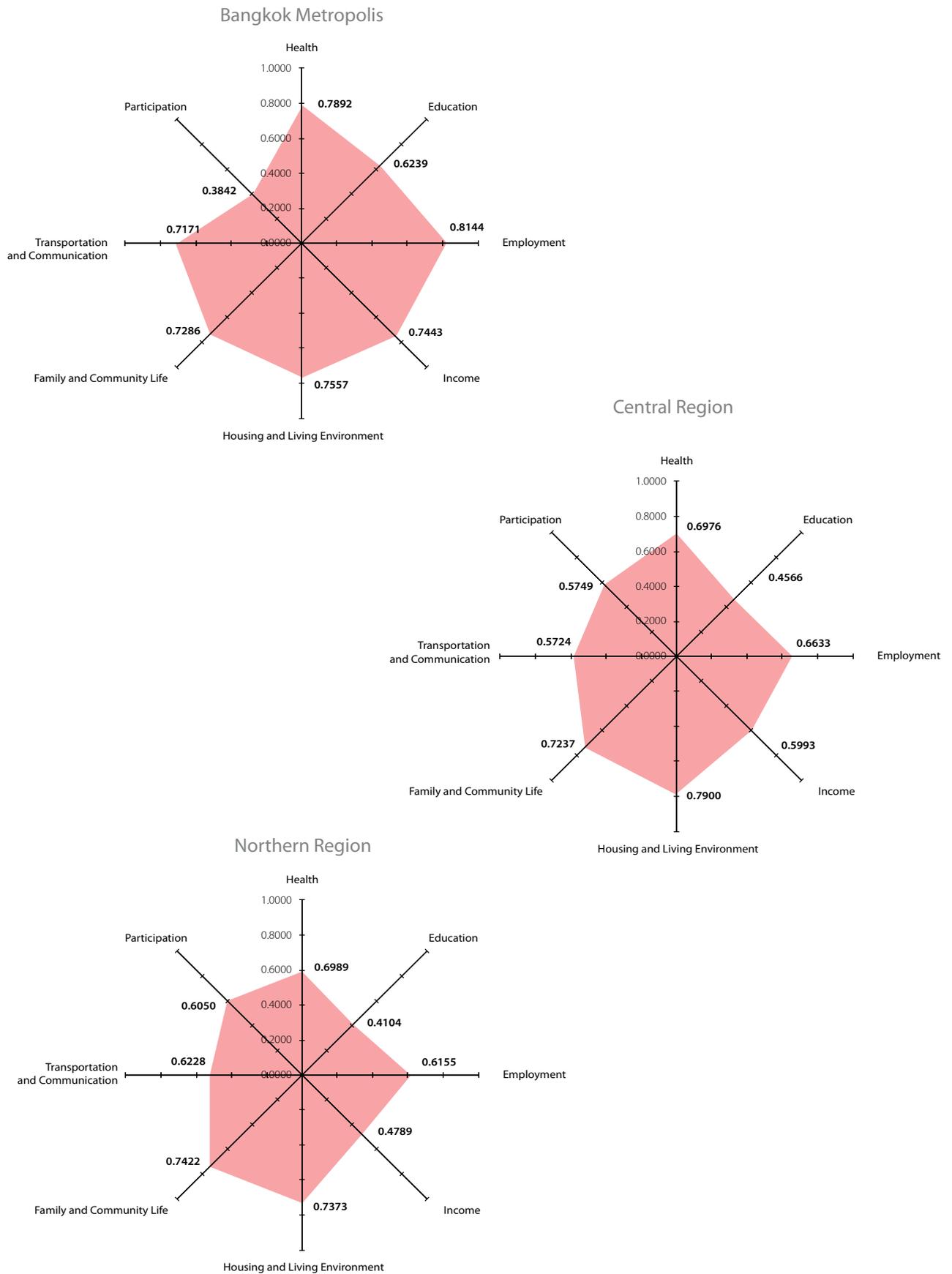
## 2. National and Regional Human Achievement Index

The eight components (indices) that make up the composite HAI show that human development in Thailand is more advanced in some areas than in others (see Figure 1). Family and Community Life is the most advanced aspect of human development, followed by Housing and Living Environment, Health, and Employment. Education is the least developed aspect followed by Income, Transport and Communication, and Participation.

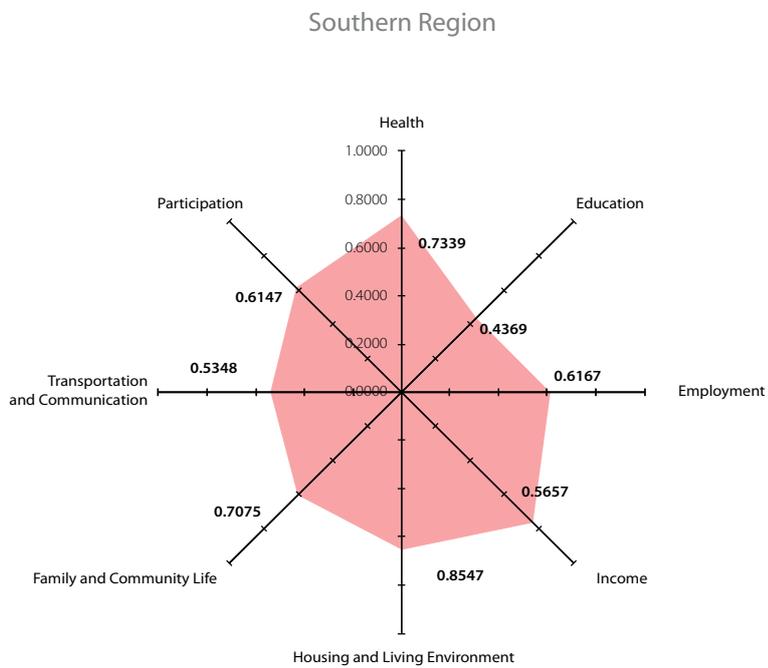
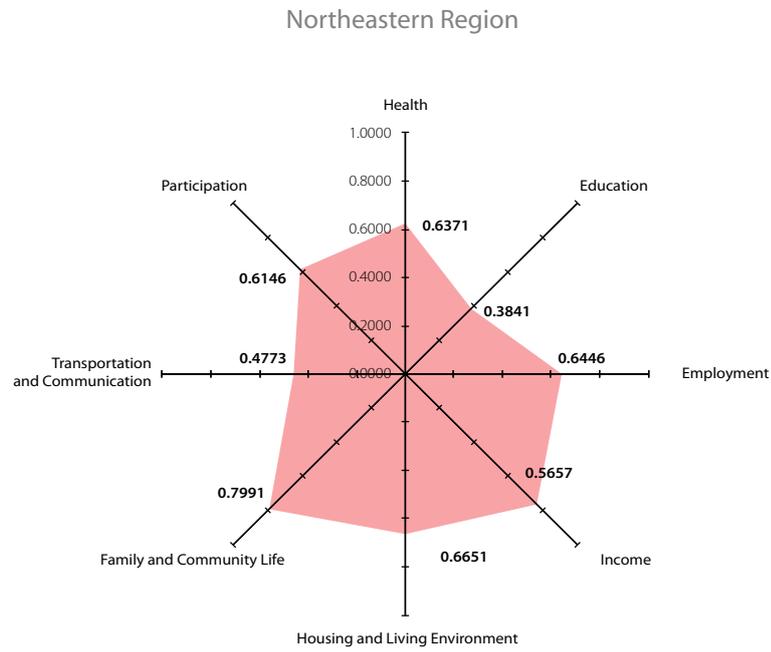
**Figure 1: Thailand HAI by Component**



**Figure 2: Regional HAI by component**



**Figure 2: Regional HAI by component (continued)**



## 3. Provincial Human Achievement Index

HAI is often used to compare the human development situation among provinces in order to identify advanced and deprived areas. Map 1 shows that human development is most advanced in the Central Region and parts of the South. Border provinces in the North, Northeast and the deep South still lag behind.

Table 2 shows the top ten and bottom ten provinces on HAI 2007 and HAI 2009. Phuket continues to occupy the top spot. Bangkok and the nearby provinces of Pathum Thani, Nakhon Pathom and Nonthaburi also make the list, along with Rayong and Ayutthaya, the industrial hubs in the East and the Central Plains.

Samut Songkhram, a small, quiet province near Bangkok that rose to fame in recent years for its community-based cultural tourism is a new addition to the top ten. In the South, Songkhla retains its top-ten spot, while Phang-nga, having recovered from the tsunami, represents a new entry.

Two provinces that have dropped out of the top ten since 2007 are Samut Prakan, an industrial city adjacent to Bangkok, and Sing Buri in the Central Plain.

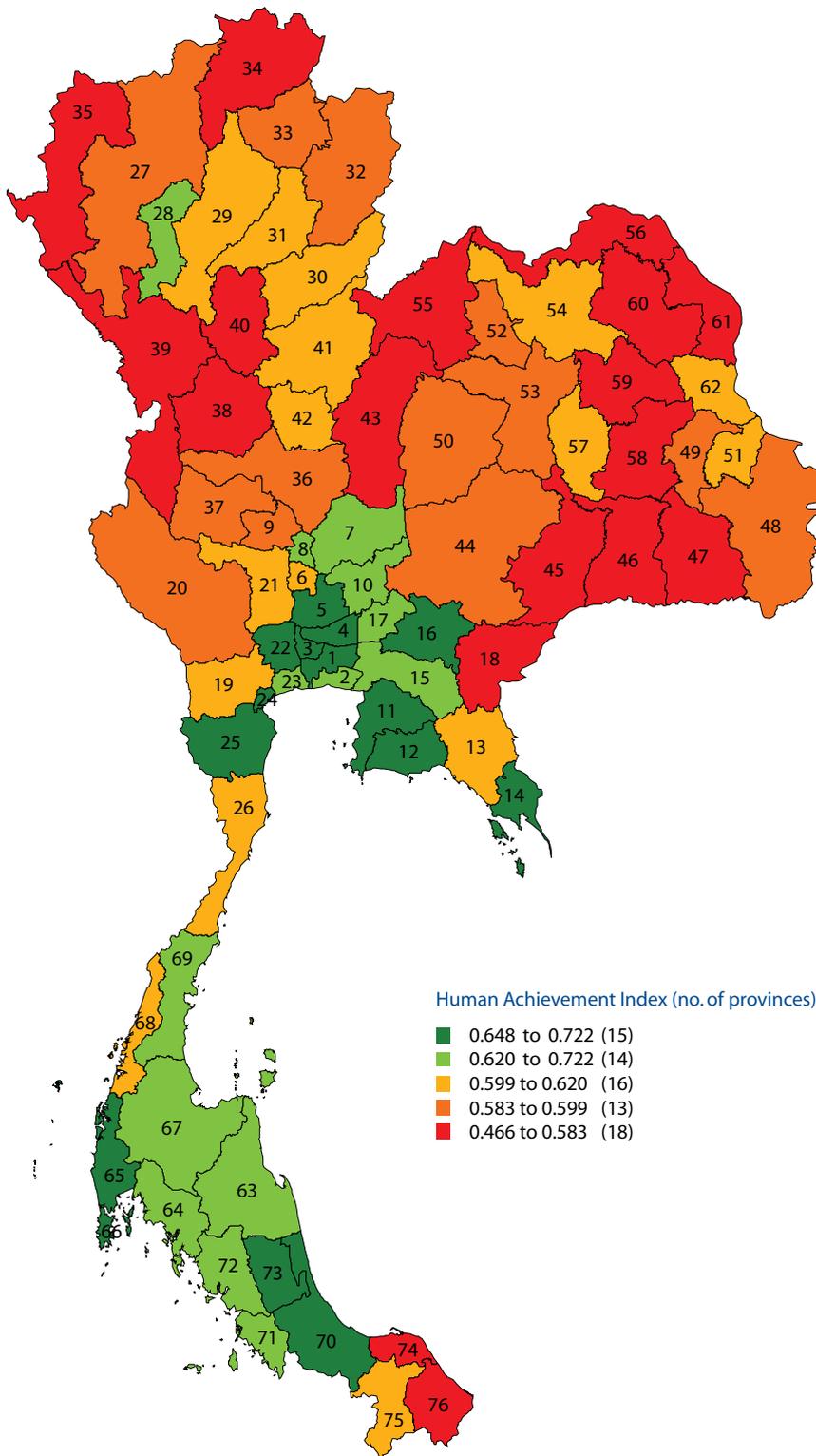
At the bottom end, Mae Hong Son retains its last place. The bottom ten are made up of four Northern provinces (Mae Hong Son, Tak, Phetchabun, Kamphaeng Phet), four Northeastern provinces (Si Sa Ket, Surin, Buri Ram, Nakhon Phanom), one Southern province (Pattani), and one province from the Central Plain (Sa Kaeo).

Compared with HAI 2007, Pattani, Buri Ram and Sa Kaeo represent new entries into the bottom ten, while Narathiwat, Nong Bua Lam Phu, and Chaiyaphum moved up and out of the bottom ten.

**Table 2: HAI provincial ranking 2007 and 2009**

Top ten provinces		Bottom ten provinces	
HAI 2007 (2005 data)	HAI 2009 (2007 data)	HAI 2007 (2005 data)	HAI 2009 (2007 data)
1 Phuket	1 Phuket	67 Nong Bua Lam Phu	67 Kamphaeng Phet
2 Bangkok Metropolis	2 Bangkok Metropolis	68 Phetchabun	68 Nakhon Phanom
3 Pathum Thani	3 Pathum Thani	69 Nakhon Phanom	69 Pattani
4 Phra Nakhon Si Ayutthaya	4 Songkhla	70 Chaiyaphum	70 Buri Ram
5 Nonthaburi	5 Samut Songkhram	71 Narathiwat	71 Surin
6 Songkhla	6 Nakhon Pathom	72 Si Sa Ket	72 Phetchabun
7 Sing Buri	7 Phang-nga	73 Kamphaeng Phet	73 Si Sa Ket
8 Nakhon Pathom	8 Rayong	74 Surin	74 Tak
9 Rayong	9 Phra Nakhon Si Ayutthaya	75 Tak	75 Sa Kaeo
10 Samut Prakan	10 Nonthaburi	76 Mae Hong Son	76 Mae Hong Son

**Map 0: HAI provincial ranking**



Human Achievement Index (no. of provinces)

- 0.648 to 0.722 (15)
- 0.620 to 0.722 (14)
- 0.599 to 0.620 (16)
- 0.583 to 0.599 (13)
- 0.466 to 0.583 (18)

Rank		Code
1	Phuket	66
2	Bangkok Metropolis	1
3	Pathum Thani	4
4	Songkhla	70
5	Samut Songkhram	24
6	Nakhon Pathom	22
7	Phang-nga	65
8	Rayong	12
9	Phra Nakhon Si Ayutthaya	5
10	Nonthaburi	3
11	Phatthalung	73
12	Phetchaburi	25
13	Trat	14
14	Chon Buri	11
15	Prachin Buri	16
16	Chachoengsao	15
17	Nakhon Nayok	17
18	Chumphon	69
19	Saraburi	10
20	Sing Buri	8
21	Trang	72
22	Samut Prakan	2
23	Lamphun	28
24	Krabi	64
25	Surat Thani	67
26	Samut Sakhon	23
27	Satun	71
28	Lop Buri	7
29	Nakhon Si Thammarat	63
30	Ranong	68
31	Prachuap Khiri Khan	26
32	Yala	75
33	Ang Thong	6
34	Chanthaburi	13
35	Lampang	29
36	Ratchaburi	19
37	Udon Thani	54
38	Mukdahan	62
39	Maha Sarakham	57
40	Phrae	31
41	Amnat Charoen	51
42	Uttaradit	30
43	Suphan Buri	21
44	Phitsanulok	41
45	Phichit	42
46	Chiang Mai	27
47	Uthai Thani	37
48	Phayao	33
49	Nakhon Ratchasima	44
50	Chai Nat	9
51	Chaiyaphum	50
52	Kanchanaburi	20
53	Nong Bua Lam Phu	52
54	Nakhon Sawan	36
55	Ubon Ratchathani	48
56	Khon Kaen	53
57	Yasothon	49
58	Nan	32
59	Chiang Rai	34
60	Sukhothai	40
61	Nong Khai	56
62	Sakon Nakhon	60
63	Roi Et	58
64	Kalasin	59
65	Narathiwat	76
66	Loei	55
67	Kamphaeng Phet	38
68	Nakhon Phanom	61
69	Pattani	74
70	Buri Ram	45
71	Surin	46
72	Phetchabun	43
73	Si Sa Ket	47
74	Tak	39
75	Sa Kaeo	18
76	Mae Hong Son	35

**Table 3: Provincial ranking by HAI indices**

Rank	Health	Education	Employment	Income	Housing	Family	Transport	Participation	HAI	HAI value
1	Phuket	Bangkok Metropolis	Rayong	Bangkok Metropolis	Phatthalung	Udon Thani	Phuket	Mukdahan	Phuket	0.7212
2	Bangkok Metropolis	Chon Buri	Phra Nakhon Si Ayutthaya	Nonthaburi	Phetchaburi	Nong Bua Lam Phu	Bangkok Metropolis	Chumphon	Bangkok Metropolis	0.6949
3	Songkhla	Sing Buri	Bangkok Metropolis	Nakhon Pathom	Satun	Loei	Nonthaburi	Amnat Charoen	Pathum Thani	0.6904
4	Phang-nga	Nonthaburi	Pathum Thani	Samut Prakan	Nakhon Nayok	Uttaradit	Nakhon Pathom	Phang-nga	Songkhla	0.6724
5	Yala	Songkhla	Phuket	Phuket	Nakhon Si Thammarat	Sakon Nakhon	Rayong	Maha Sarakham	Samut Songkhram	0.6695
6	Ranong	Phatthalung	Samut Sakhon	Pathum Thani	Yala	Buri Ram	Sing Buri	Sing Buri	Nakhon Pathom	0.6695
7	Chon Buri	Nakhon Nayok	Chon Buri	Samut Songkhram	Phang-nga	Kalasin	Songkhla	Phatthalung	Phang-nga	0.6681
8	Pathum Thani	Samut Songkhram	Lamphun	Phang-nga	Songkhla	Chaiyaphum	Pathum Thani	Krabi	Rayong	0.6670
9	Samut Sakhon	Phuket	Prachin Buri	Samut Sakhon	Prachin Buri	Phang-nga	Lampang	Lamphun	Phra Nakhon Si Ayutthaya	0.6647
10	Nakhon Pathom	Lop Buri	Yasothon	Chon Buri	Trang	Mukdahan	Trang	Chiang Rai	Nonthaburi	0.6645
11	Samut Prakan	Lampang	Kalasin	Phra Nakhon Si Ayutthaya	Samut Songkhram	Khon Kaen	Chon Buri	Trat	Phatthalung	0.6555
12	Satun	Rayong	Maha Sarakham	Saraburi	Krabi	Phichit	Samut Songkhram	Prachin Buri	Phetchaburi	0.6546
13	Rayong	Phetchaburi	Mae Hong Son	Surat Thani	Nakhon Pathom	Phuket	Samut Prakan	Samut Songkhram	Trat	0.6528
14	Narathiwat	Phrae	Nonthaburi	Songkhla	Prachuap Khiri Khan	Maha Sarakham	Ang Thong	Phetchaburi	Chon Buri	0.6507
15	Nakhon Nayok	Nakhon Pathom	Surat Thani	Prachin Buri	Trat	Amnat Charoen	Phang-nga	Ang Thong	Prachin Buri	0.6499
16	Chachoengsao	Nakhon Si Thammarat	Chaiyaphum	Chachoengsao	Chumphon	Phetchabun	Samut Sakhon	Sukhothai	Chachoengsao	0.6477
17	Phra Nakhon Si Ayutthaya	Phra Nakhon Si Ayutthaya	Trat	Satun	Ang Thong	Sing Buri	Saraburi	Lampang	Nakhon Nayok	0.6473
18	Maha Sarakham	Phitsanulok	Roi Et	Rayong	Surat Thani	Nan	Ratchaburi	Ubon Ratchathani	Chumphon	0.6455
19	Phatthalung	Chachoengsao	Prachuap Khiri Khan	Yala	Chachoengsao	Ubon Ratchathani	Chanthaburi	Chaiyaphum	Saraburi	0.6443
20	Trang	Pathum Thani	Nan	Trang	Rayong	Si Sa Ket	Phrae	Nakhon Phanom	Sing Buri	0.6439
21	Trat	Trang	Loei	Phetchaburi	Narathiwat	Trat	Lamphun	Nakhon Si Thammarat	Trang	0.6411
22	Phetchaburi	Prachuap Khiri Khan	Uthai Thani	Suphan Buri	Nakhon Sawan	Tak	Lop Buri	Chai Nat	Samut Prakan	0.6401
23	Surat Thani	Trat	Nong Bua Lam Phu	Chumphon	Chanthaburi	Kamphaeng Phet	Phayao	Yasothon	Lamphun	0.6367
24	Pattani	Chumphon	Chachoengsao	Phatthalung	Nonthaburi	Lampang	Nakhon Nayok	Kanchanaburi	Krabi	0.6357
25	Krabi	Saraburi	Buri Ram	Ratchaburi	Suphan Buri	Phrae	Phetchaburi	Uthai Thani	Surat Thani	0.6352
26	Ubon Ratchathani	Uttaradit	Amnat Charoen	Lop Buri	Saraburi	Surin	Phitsanulok	Chachoengsao	Samut Sakhon	0.6326

**Table 3: Provincial ranking by HAI indices (continued)**

Rank	Health	Education	Employment	Income	Housing	Family	Transport	Participation	HAI	HAI value
27	Saraburi	Lamphun	Ubon Ratchathani	Prachuap Khiri Khan	Phra Nakhon Si Ayutthaya	Nakhon Ratchasima	Phra Nakhon Si Ayutthaya	Phayao	Satun	0.6294
28	Chanthaburi	Mukdahan	Saraburi	Ang Thong	Lop Buri	Samut Prakan	Trat	Nakhon Sawan	Lop Buri	0.6244
29	Nakhon Si Thammarat	Prachin Buri	Phrae	Krabi	Nakhon Ratchasima	Phra Nakhon Si Ayutthaya	Krabi	Roi Et	Nakhon Si Thammarat	0.6214
30	Chumphon	Ang Thong	Chumphon	Chanthaburi	Sing Buri	Pathum Thani	Yala	Nan	Ranong	0.6198
31	Ratchaburi	Samut Prakan	Tak	Nakhon Nayok	Uttaradit	Nakhon Si Thammarat	Chiang Mai	Udon Thani	Prachuap Khiri Khan	0.6192
32	Nonthaburi	Ratchaburi	Nakhon Phanom	Lamphun	Lamphun	Nong Khai	Chachoengsao	Phrae	Yala	0.6182
33	Phichit	Chiang Mai	Nakhon Pathom	Nong Khai	Ratchaburi	Nonthaburi	Chiang Rai	Lop Buri	Ang Thong	0.6178
34	Udon Thani	Surat Thani	Kamphaeng Phet	Ranong	Kanchanaburi	Nakhon Phanom	Prachuap Khiri Khan	Saraburi	Chanthaburi	0.6152
35	Nong Bua Lam Phu	Satun	Samut Songkhram	Sing Buri	Phuket	Samut Songkhram	Prachin Buri	Surin	Lampang	0.6143
36	Amnat Charoen	Uthai Thani	Lop Buri	Narathiwat	Ranong	Phitsanulok	Chai Nat	Pathum Thani	Ratchaburi	0.6131
37	Yasothon	Chanthaburi	Nakhon Nayok	Trat	Pathum Thani	Yasothon	Mukdahan	Kalasin	Udon Thani	0.6105
38	Nakhon Ratchasima	Udon Thani	Samut Prakan	Kanchanaburi	Pattani	Krabi	Uttaradit	Kamphaeng Phet	Mukdahan	0.6088
39	Chiang Mai	Nan	Trang	Nakhon Si Thammarat	Phichit	Chachoengsao	Phatthalung	Ranong	Maha Sarakham	0.6086
40	Nong Khai	Chai Nat	Si Sa Ket	Phitsanulok	Phitsanulok	Nakhon Sawan	Suphan Buri	Loei	Phrae	0.6080
41	Uthai Thani	Phang-nga	Ranong	Chiang Mai	Phayao	Sa Kaeo	Phichit	Songkhla	Amnat Charoen	0.6070
42	Prachuap Khiri Khan	Nakhon Ratchasima	Phayao	Khon Kaen	Phrae	Sukhothai	Udon Thani	Uttaradit	Uttaradit	0.6055
43	Khon Kaen	Yala	Songkhla	Chiang Rai	Chiang Mai	Lop Buri	Kamphaeng Phet	Suphan Buri	Suphan Buri	0.6047
44	Roi Et	Kalasin	Phetchaburi	Kamphaeng Phet	Bangkok Metropolis	Satun	Khon Kaen	Chiang Mai	Phitsanulok	0.6044
45	Buri Ram	Suphan Buri	Chai Nat	Phayao	Chai Nat	Nakhon Nayok	Sukhothai	Phuket	Phichit	0.5997
46	Suphan Buri	Phayao	Chanthaburi	Udon Thani	Chon Buri	Chai Nat	Surat Thani	Nakhon Ratchasima	Chiang Mai	0.5987
47	Nan	Phichit	Narathiwat	Phrae	Sukhothai	Chanthaburi	Kanchanaburi	Si Sa Ket	Uthai Thani	0.5982
48	Kanchanaburi	Surin	Khon Kaen	Phichit	Chaiyaphum	Chumphon	Chumphon	Surat Thani	Phayao	0.5979
49	Prachin Buri	Khon Kaen	Sakon Nakhon	Roi Et	Samut Sakhon	Nakhon Pathom	Nakhon Sawan	Sakon Nakhon	Nakhon Ratchasima	0.5963
50	Samut Songkhram	Nakhon Phanom	Ratchaburi	Chai Nat	Phetchabun	Bangkok Metropolis	Ranong	Nong Bua Lam Phu	Chai Nat	0.5940
51	Ang Thong	Krabi	Udon Thani	Yasothon	Uthai Thani	Rayong	Nan	Prachuap Khiri Khan	Chaiyaphum	0.5939
52	Phitsanulok	Sukhothai	Phitsanulok	Phetchabun	Lampang	Uthai Thani	Phetchabun	Khon Kaen	Kanchanaburi	0.5937

**Table 3: Provincial ranking by HAI indices (continued)**

Rank	Health	Educa-tion	Employ-ment	Income	Housing	Family	Transport	Participa-tion	HAI	HAI value
53	Kalasin	Samut Sakhon	Kanchana-buri	Maha Sarakhm	Chiang Rai	Saraburi	Nong Bua Lam Phu	Pra Nakhon Si Ayutthaya	Nong Bua Lam Phu	0.5927
54	Sing Buri	Nakhon Sawan	Nakhon Sawan	Pattani	Kam-phaeng Phet	Prachin Buri	Nakhon Phanom	Satun	Nakhon Sawan	0.5924
55	Lampang	Ranong	Nakhon Ratchasima	Ubon Rat-chathani	Nong Bua Lam Phu	Roi Et	Surin	Buri Ram	Ubon Rat-chathani	0.5901
56	Sakon Nakhon	Roi Et	Phatth-alung	Uttaradit	Samut Prakan	Phetcha-buri	Uthai Thani	Ratchaburi	Khon Kaen	0.5880
57	Phayao	Kanchana-buri	Nong Khai	Tak	Nong Khai	Phatth-alung	Satun	Nakhon Nayok	Yasothon	0.5855
58	Si Sa Ket	Chiang Rai	Surin	Amnat Charoen	Udon Thani	Lamphun	Pattani	Yala	Nan	0.5838
59	Nakhon Sawan	Sakon Nakhon	Pattani	Uthai Thani	Surin	Songkhla	Tak	Nong Khai	Chiang Rai	0.5825
60	Lamphun	Yasothon	Mukdahan	Sakon Nakhon	Mukdahan	Trang	Roi Et	Narathi-wat	Sukhothai	0.5816
61	Sa Kaeo	Sa Kaeo	Suphan Buri	Lampang	Amnat Charoen	Samut Sakhon	Ubon Rat-chathani	Trang	Nong Khai	0.5816
62	Surin	Phetch-abun	Chiang Mai	Nakhon Phanom	Sakon Nakhon	Ranong	Yasothon	Pattani	Sakon Nakhon	0.5811
63	Mae Hong Son	Si Sa Ket	Sukhothai	Nakhon Ratcha-sima	Si Sa Ket	Suphan Buri	Nakhon Ratchasima	Phichit	Roi Et	0.5802
64	Loei	Kam-phaeng Phet	Krabi	Nakhon Sawan	Nakhon Phanom	Chiang Mai	Nakhon Si Tham-marat	Sa Kaeo	Kalasin	0.5801
65	Chai-yaphum	Maha Sarakhm	Phichit	Sukhothai	Loei	Surat Thani	Amnat Charoen	Mae Hong Son	Narathiwat	0.5797
66	Lop Buri	Nong Bua Lam Phu	Lampang	Mukdahan	Sa Kaeo	Kanchana-buri	Loei	Tak	Loei	0.5783
67	Phetch-abun	Nong Khai	Ang Thong	Chai-yaphum	Nan	Ratchaburi	Maha Sarakhm	Phetch-abun	Kam-phaeng Phet	0.5776
68	Sukhothai	Amnat Charoen	Uttaradit	Kalasin	Khon Kaen	Chiang Rai	Chai-yaphum	Nakhon Pathom	Nakhon Phanom	0.5754
69	Uttaradit	Chai-yaphum	Chiang Rai	Nong Bua Lam Phu	Ubon Rat-chathani	Phayao	Sakon Nakhon	Phitsanu-lok	Pattani	0.5706
70	Chiang Rai	Loei	Satun	Buri Ram	Roi Et	Prachuap Khiri Khan	Sa Kaeo	Chantha-buri	Buri Ram	0.5687
71	Chai Nat	Pattani	Nakhon Si Tham-marat	Loei	Buri Ram	Ang Thong	Narathiwat	Samut Prakan	Surin	0.5686
72	Mukdahan	Ubon Rat-chathani	Sing Buri	Surin	Tak	Chon Buri	Kalasin	Chon Buri	Phetchabun	0.5657
73	Tak	Tak	Phetch-abun	Sa Kaeo	Maha Sarakhm	Yala	Nong Khai	Rayong	Si Sa Ket	0.5546
74	Nakhon Phanom	Buri Ram	Yala	Nan	Yasothon	Pattani	Buri Ram	Nonthaburi	Tak	0.5536
75	Phrae	Narathiwat	Phang-nga	Si Sa Ket	Kalasin	Narathiwat	Si Sa Ket	Samut Sakhon	Sa Kaeo	0.5264
76	Kamphaeng Phet	Mae Hong Son	Sa Kaeo	Mae Hong Son	Mae Hong Son	Mae Hong Son	Mae Hong Son	Bangkok Metropolis	Mae Hong Son	0.4666

## 4. The eight indices

### 1. Health Index and Indicators

Good health is the fundamental basis of human development. In the past ten years, health insurance in Thailand has expanded to cover 97–98% of the population, the highest coverage in the world, followed by Germany at 85%. But the quality of health services remains an important challenge. Some population groups still lack health awareness and skills. Some are also prone to unhealthy behaviour. Health infrastructure, especially health personnel, is inadequate in the rural and remote areas. This is an important constraint given the fact that Thai population is ageing and will soon need more extensive health care.

*The health index consists of seven indicators: underweight births (less than 2,500 gm.), population with physical illness, population with disability and/or impairment, population with mental illness, population with unhealthy behaviour (smoking and/or alcohol drinking), population that exercise, population per physician.*

Bangkok and selected Southern provinces occupied the five top places, while Northern and Northeastern provinces found themselves in the bottom five spots.

Health Index			
Top five provinces		Bottom five provinces	
1	Phuket	72	Mukdahan
2	Bangkok Metropolis	73	Tak
3	Songkhla	74	Nakhon Phanom
4	Phang-nga	75	Phrae
5	Yala	76	Kamphaeng Phet

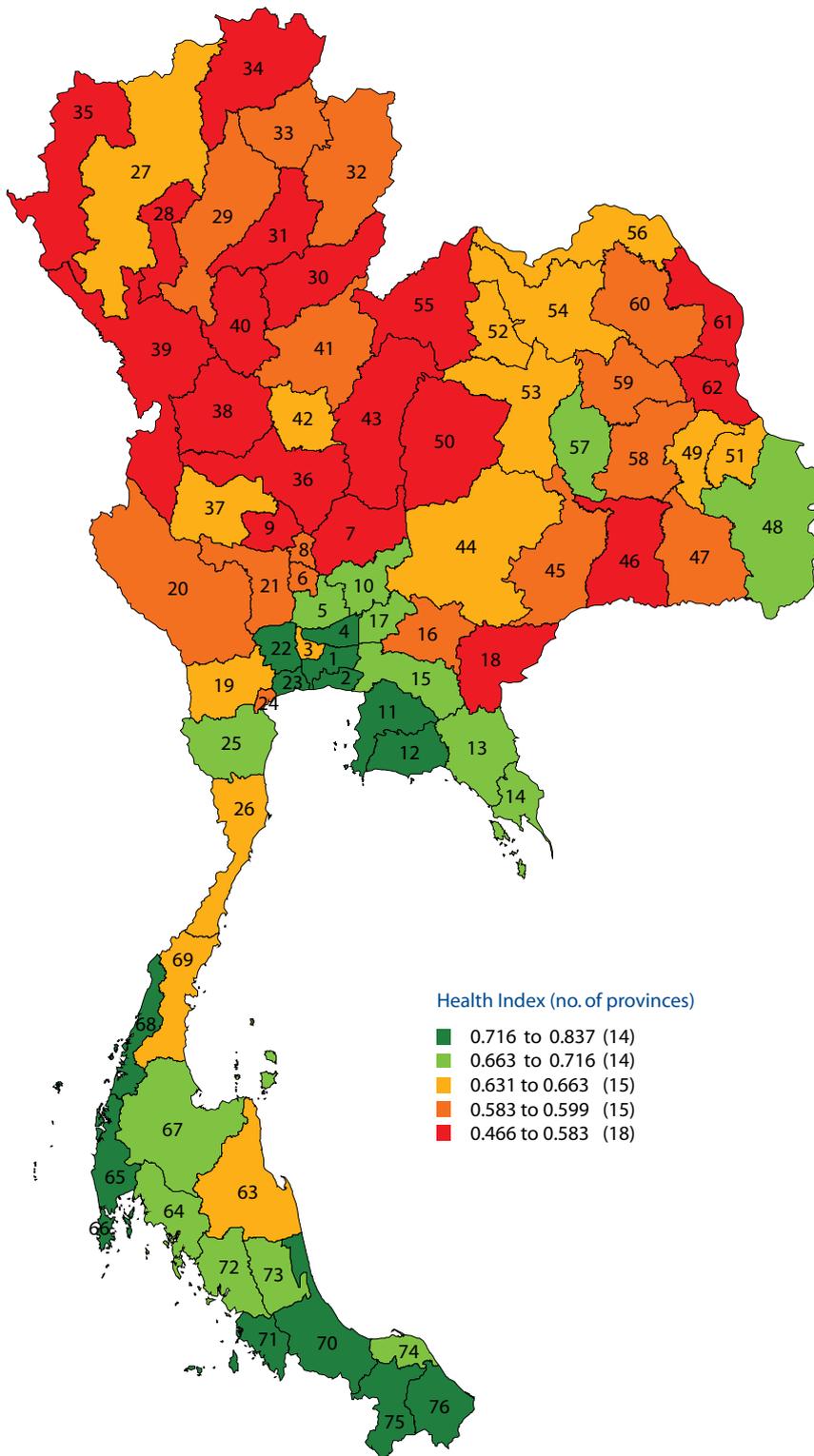
### Children's health

Any newborn that weighs less than 2,500 grams is considered underweight, possibly as a result of insufficient prenatal care. Underweight newborns carry a high risk of infection and slow or stunted growth. Underweight births increased from 9.84% in 2003 to 10.97% in 2007, with a higher rate among female newborns.

Southern provinces had the lowest rates of underweight birth, while Northern provinces featured the highest rates.

Underweight births in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Satun	8.0	72	Lamphun	13.7
2	Phattalung	8.8	73	Sakon Nakhon	14.0
3	Nakhon Si Thammarat	9.0	74	Chiang Mai	14.9
4	Nong Bua Lam Phu	9.2	75	Mae Hong Son	22.1
5	Phuket	9.2	76	Tak	24.1

Map 1: Health Index



Rank		Code
1	Phuket	66
2	Bangkok Metropolis	1
3	Songkhla	70
4	Phang-nga	65
5	Yala	75
6	Ranong	68
7	Chon Buri	11
8	Pathum Thani	4
9	Samut Sakhon	23
10	Nakhon Pathom	22
11	Samut Prakan	2
12	Satun	71
13	Rayong	12
14	Narathiwat	76
15	Nakhon Nayok	17
16	Chachoengsao	15
17	Phra Nakhon Si Ayutthaya	5
18	Maha Sarakham	57
19	Phatthalung	73
20	Trang	72
21	Trat	14
22	Phetchaburi	25
23	Surat Thani	67
24	Pattani	74
25	Krabi	64
26	Ubon Ratchathani	48
27	Saraburi	10
28	Chanthaburi	13
29	Nakhon Si Thammarat	63
30	Chumphon	69
31	Ratchaburi	19
32	Nonthaburi	3
33	Phichit	42
34	Udon Thani	54
35	Nong Bua Lam Phu	52
36	Amnat Charoen	51
37	Yasothon	49
38	Nakhon Ratchasima	44
39	Chiang Mai	27
40	Nong Khai	56
41	Uthai Thani	37
42	Prachuap Khiri Khan	26
43	Khon Kaen	53
44	Roi Et	58
45	Buri Ram	45
46	Suphan Buri	21
47	Nan	32
48	Kanchanaburi	20
49	Prachin Buri	16
50	Samut Songkhram	24
51	Ang Thong	6
52	Phitsanulok	41
53	Kalasin	59
54	Sing Buri	8
55	Lampang	29
56	Sakon Nakhon	60
57	Phayao	33
58	Si Sa Ket	47
59	Nakhon Sawan	36
60	Lamphun	28
61	Sa Kaeo	18
62	Surin	46
63	Mae Hong Son	35
64	Loei	55
65	Chaiyaphum	50
66	Lop Buri	7
67	Phetchabun	43
68	Sukhothai	40
69	Uttaradit	30
70	Chiang Rai	34
71	Chai Nat	9
72	Mukdahan	62
73	Tak	39
74	Nakhon Phanom	61
75	Phrae	31
76	Kamphaeng Phet	38

## Disability and impairment

In 2007, there were 1.9 million people or 2.9% of the population with disability and/or impairment. The North had the highest rate of disability. The rate was twice as high in the rural areas, and higher among women. Disability and impairment rates were particularly high among the older age groups; with a rate of 31% for the population 75 years and over. Disability and impairment is an important barrier to education. 81.7% of disabled persons in the 5-30 years age group were not formally educated. This limits their employability.

The rates of disability and impairment were lowest in Bangkok and the vicinity, and highest in Northern provinces.

Population with disability and/or impairment in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Samut Sakhon	0.3	72	Chai Nat	5.8
2	Bangkok Metropolis	0.5	73	Chaiyaphum	5.8
3	Ranong	0.5	74	Lop Buri	6.2
4	Samut Prakan	0.5	75	Sukhothai	6.4
5	Chon Buri / Phuket / Pathum Thani	0.6	76	Nakhon Sawan	7.0

## Physical illness

In 2007, the illness rate (anyone in the family ill in the past month) was 17.4% in total, 19.5% among women and 15.3% among men. Northern provinces reported higher rates than the rest of the country. In most cases, people treated themselves with medicine purchased from a drug store. In cases of admission, 62.6% received free medical treatment.

Population with physical illness in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Rayong	4.0	72	Suphan Buri	30.9
2	Yala	4.8	73	Kamphaeng Phet	31.3
3	Samut Sakhon	8.6	74	Sing Buri	33.5
4	Ubon Ratchathani	8.6	75	Tak	33.6
5	Samut Prakan / Samut Sakhon	8.6	76	Uttaradit	35.9

## Mental illness

In the past few years, several causes including violence in the South, soaring oil prices, and economic and political crises have put Thai people under a great deal of stress. Mental illness out-patients increased from 24.6 to 42.4 per 1,000 population between 1991 and 2006. In-patients also increased from 80.0 to 227.2 per 100,000 population during the same period. Northern provinces had the highest rates of mental illness.

Population with mental illness in 2007 (per 1,000 population)					
Top five provinces			Bottom five provinces		
1	Yala	2.2	72	Phayao	44.8
2	Satun	2.2	73	Chiang Mai	51.5
3	Chachoengsao	3.0	74	Ang Thong	57.9
4	Roi Et	3.6	75	Phrae	73.6
5	Phichit	4.0	76	Nonthaburi	124.1

Note: 1) Mental illness rate is exceptionally high where specialized facilities are located, e.g. Nonthaburi.

## Smoking

Each year, 42,000 Thais die from smoking-related diseases. Smoking is the number three health risk among Thai men, after alcohol consumption and high blood pressure. It is responsible for 90% of cases of male lung cancer, 82% of larynx cancer, and 80% of oesophagus cancer.

Regular smokers aged 15 years and over dropped from 22.5% to 18.5% between 2001 and 2007. The percentage was higher in rural than in urban areas. The highest rate—21%—was among those of working age, (25–59 years old), followed by 16.7% among the elderly; 12.1% of youth, (15–24 years old), also smoked regularly. Although there were fewer smokers, annual cigarette consumption per smoker increased from 71 packs in 2001 – 2 to 87.6 packs in 2006.

## Alcohol consumption

Alcohol consumption has far-reaching health and social impacts. It is the number one health risk among Thai men, and an important contributing factor to over 60 categories of disease and injury, including traffic accidents.

Alcohol drinking among the population aged 15 years and over shows a declining trend, from 32.7% in 2001 to 29.3% in 2007. But the volume of net alcohol consumption soared from 1,340.9 million litres in 1999 during the economic crisis to 2,479.7 million litres in 2006 after the economy recovered. The percentage of daily drinkers increased from 8.6% to 13% over the past decade. Smoking and/or alcohol drinking was most prevalent in the North and Northeast.

Unhealthy behaviour in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Narathiwat	18.4	72	Mukdahan	43.4
2	Phra Nakhon Si Ayutthaya	19.0	73	Nong Bua Lam Phu	44.4
3	Phetchaburi	20.3	74	Chiang Rai	49.6
4	Samut Songkhram	22.7	75	Phrae	50.4
5	Bangkok Metropolis	23.3	76	Phayao	54.0

## Physical exercise

Thai people do not exercise enough. One-fourth of the population is overweight. Obesity leads to many health risks. In 2003, only 29% of population 11 years and over exercised. The proportion increased only slightly to 29.6% in 2007. Men exercised more than women, and urban people exercised more than their rural counterparts. Southern provinces scored high on physical exercise compared with the rest of the country.

Population that exercise in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Trang	54.7	72	Rayong	17.2
2	Songkhla	51.8	73	Samut Songkhram	16.8
3	Maha Sarakham	44.9	74	Mae Hong Son	15.9
4	Phuket	43.8	75	Phetchaburi	15.8
5	Phang-nga	41.3	76	Nakhon Phanom	12.3

## Population per physician

Health personnel are concentrated in Bangkok and the vicinity and in major provincial cities. Physicians in the rural and remote areas are scarce and overworked, posing limitations on the access and quality of health services provided to the rural population.

The population per physician in the best province – Nakhon Nayok was 12.5 times smaller than that in the most deprived province, Nakhon Phanom. With the exception of Kamphaeng Phet in the North, all of the bottom five provinces were in the Northeast.

Population per physician in 2007 (persons)					
Top five provinces			Bottom five provinces		
1	Nakhon Nayok	762	72	Sakon Nakhon	7,770
2	Bangkok Metropolis	850	73	Roi Et	8,033
3	Chiang Mai	1,409	74	Si Sa Ket	8,756
4	Chon Buri	1,435	75	Kamphaeng Phet	8,761
5	Songkhla	1,517	76	Nakhon Phanom	9,537

## 2. Education Index and Indicators

Education is the most effective asset for enhancing the capacity to fulfil human potential. Through education, people obtain knowledge, wisdom, values and ethics. They learn professional, social and life skills that are essential for living decent and dignified lives and for making valuable contribution to the society.

*The education index consists of four indicators: gross enrolment in upper-secondary level, mean years of schooling, upper-secondary O-Net scores, and upper-secondary students per classroom.*

The top scorers on education were Bangkok, provinces in the Central Region, and Songkhla – the education hub in the South. The bottom five provinces were remote provinces in the North, Northeast and the South.

Education Index			
Top five provinces		Bottom five provinces	
1	Bangkok Metropolis	72	Ubon Ratchathani
2	Chon Buri	73	Tak
3	Sing Buri	74	Buri Ram
4	Nonthaburi	75	Narathiwat
5	Songkhla	76	Mae Hong Son

### Mean years of schooling

The mean years of schooling continued to increase, especially in Bangkok and the vicinity. However the rate of increase was much slower in the remote and mountainous Northern provinces.

Mean years of schooling in 2007 (years)					
Top five provinces			Bottom five provinces		
1	Nonthaburi	10.5	72	Loei / Phayao / Tak	6.4
2	Bangkok Metropolis	10.1	73	Narathiwat	6.3
3	Pathum Thani	9.8	74	Chiang Rai	6.2
4	Samut Prakan	9.4	75	Nan	5.9
5	Phuket	9.1	76	Mae Hong Son	4.6

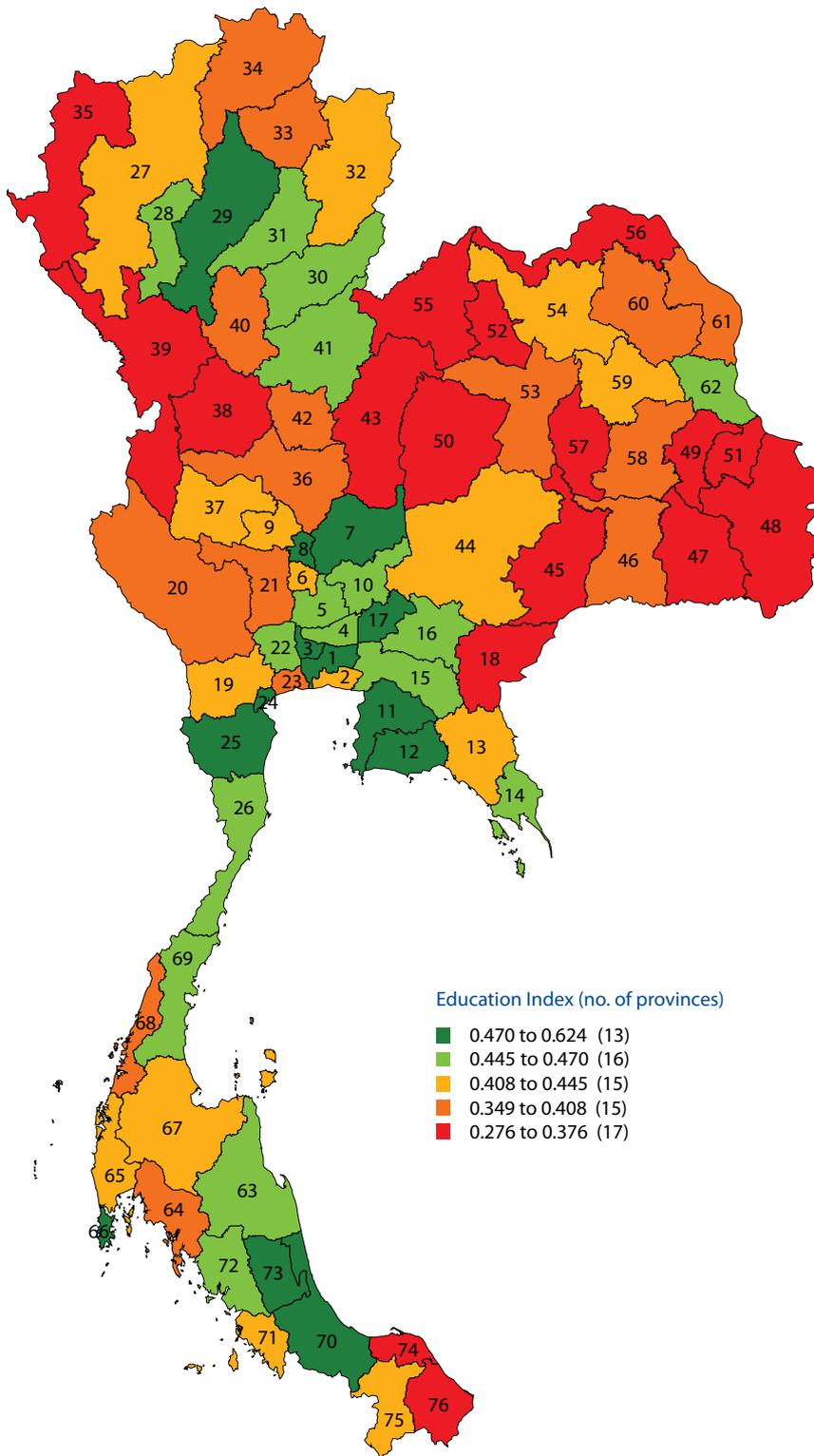
### Gross upper-secondary enrolment

Enrolment in lower-secondary level is now mandatory. At the upper-secondary level there is still significant variation in enrolment rates among provinces.

Bangkok recorded a rate over 100% because students from neighbouring provinces enrol in schools in the capital – hence the low rates in nearby Samut Prakan and Samut Sakhon. But the low rates in Kamphaeng Phet, Mae Hong Son, and Narathiwat were due to difficulties in the provision of education in these remote areas.

Gross upper-secondary and vocational enrolment in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Bangkok Metropolis	107.0	72	Samut Prakan	47.2
2	Chon Buri	91.8	73	Kamphaeng Phet	46.4
3	Sing Buri	88.2	74	Mae Hong Son	46.0
4	Phrae	84.3	75	Samut Sakhon	43.2
5	Lampang	80.5	76	Narathiwat	40.8

Map 2: Education Index



Education Index (no. of provinces)

- 0.470 to 0.624 (13)
- 0.445 to 0.470 (16)
- 0.408 to 0.445 (15)
- 0.349 to 0.408 (15)
- 0.276 to 0.376 (17)

Rank		Code
1	Bangkok Metropolis	1
2	Chon Buri	11
3	Sing Buri	8
4	Nonthaburi	3
5	Songkhla	70
6	Phatthalung	73
7	Nakhon Nayok	17
8	Samut Songkhram	24
9	Phuket	66
10	Lop Buri	7
11	Lampang	29
12	Rayong	12
13	Phetchaburi	25
14	Phrae	31
15	Nakhon Pathom	22
16	Nakhon Si Thammarat	63
17	Phra Nakhon Si Ayutthaya	5
18	Phitsanulok	41
19	Chachoengsao	15
20	Pathum Thani	4
21	Trang	72
22	Prachuap Khiri Khan	26
23	Trat	14
24	Chumphon	69
25	Saraburi	10
26	Uttaradit	30
27	Lamphun	28
28	Mukdahan	62
29	Prachin Buri	16
30	Ang Thong	6
31	Samut Prakan	2
32	Ratchaburi	19
33	Chiang Mai	27
34	Surat Thani	67
35	Satun	71
36	Uthai Thani	37
37	Chanthaburi	13
38	Udon Thani	54
39	Nan	32
40	Chai Nat	9
41	Phang-nga	65
42	Nakhon Ratchasima	44
43	Yala	75
44	Kalasin	59
45	Suphan Buri	21
46	Phayao	33
47	Phichit	42
48	Surin	46
49	Khon Kaen	53
50	Nakhon Phanom	61
51	Krabi	64
52	Sukhothai	40
53	Samut Sakhon	23
54	Nakhon Sawan	36
55	Ranong	68
56	Roi Et	58
57	Kanchanaburi	20
58	Chiang Rai	34
59	Sakon Nakhon	60
60	Yasothon	49
61	Sa Kaeo	18
62	Phetchabun	43
63	Si Sa Ket	47
64	Kamphaeng Phet	38
65	Maha Sarakham	57
66	Nong Bua Lam Phu	52
67	Nong Khai	56
68	Amnat Charoen	51
69	Chaiyaphum	50
70	Loei	55
71	Pattani	74
72	Ubon Ratchathani	48
73	Tak	39
74	Buri Ram	45
75	Narathiwat	76
76	Mae Hong Son	35

## Upper-secondary O-Net scores

The quality of education is of primary concern. The O-net scores at upper-secondary level show a generally low average. In addition, the education system has been criticised for failing to equip students with life skills and with the analytical and critical thinking which would match the expectation of the labour market, and help them lead productive and healthy lives.

The best O-Net scores were from Bangkok, Phuket, and provinces in the Bangkok vicinity. The lowest scores were from two Northeastern provinces and the three Southernmost provinces.

Average upper secondary O-Net scores in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Bangkok Metropolis	47.2	72	Nong Bua Lam Phu / Kalasin	37.4
2	Phuket	45.3	73	Kalasin	37.4
3	Nonthaburi	44.6	74	Yala	36.0
4	Nakhon Pathom	44.4	75	Pattani	35.5
5	Samut Prakan	44.3	76	Narathiwat	35.3

## Upper-secondary students per classroom

Having adequate education infrastructure is necessary. But the best schools in the city are often crowded. Hence, while a low students-per-classroom average indicates access, it may not necessarily lead to quality education.

Upper-secondary students per classroom in 2007 (students)					
Top five provinces			Bottom five provinces		
1	Prachuap Khiri Khan	30	72	Chon Buri / Phayao / Chiang rai / Bangkok	41
2	Phatthalung	31	73	Chiang Mai	42
3	Trat	32	74	Maha Sarakham	42
4	Samut Songkhram	32	75	Phuket	43
5	Nakhon Nayok / Mukdahan / Satun	33	76	Khon Kaen	43

### 3. Employment Index and Indicators

At the very least, employment is a means of living. But it should also be more. Gainful employment is a manifestation of people's capacity to realise their potential. A quality work life constitutes a fundamental basis for security and protection.

*The employment index consists of four indicators: unemployment, underemployment, workers with social security, and occupational injuries.*

Employment Index			
Top five provinces		Bottom five provinces	
1	Rayong	72	Sing Buri
2	Phra Nakhon Si Ayutthaya	73	Phetchabun
3	Bangkok Metropolis	74	Yala
4	Pathum Thani	75	Phang-nga
5	Phuket	76	Mae Hong Son

#### Unemployment

Employed population increased from 36.3 million in 2005 to 37.1 million in 2007. Unemployment rate dropped from 2.6% in 2001 to 1.2% in 2007. The highest rate was in the Central Region, the lowest in the Northeast. Unemployment was higher among men.

Unemployment in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Phrae	0.2	72	Khon Kaen	2.0
2	Trang	0.2	73	Phetchabun	2.1
3	Chaiyaphum	0.2	74	Samut Prakan	2.2
4	Phuket	0.2	75	Sing Buri	2.5
5	Uthai Thani / Samut Songkhram	0.3	76	Sa Kaeo	3.8

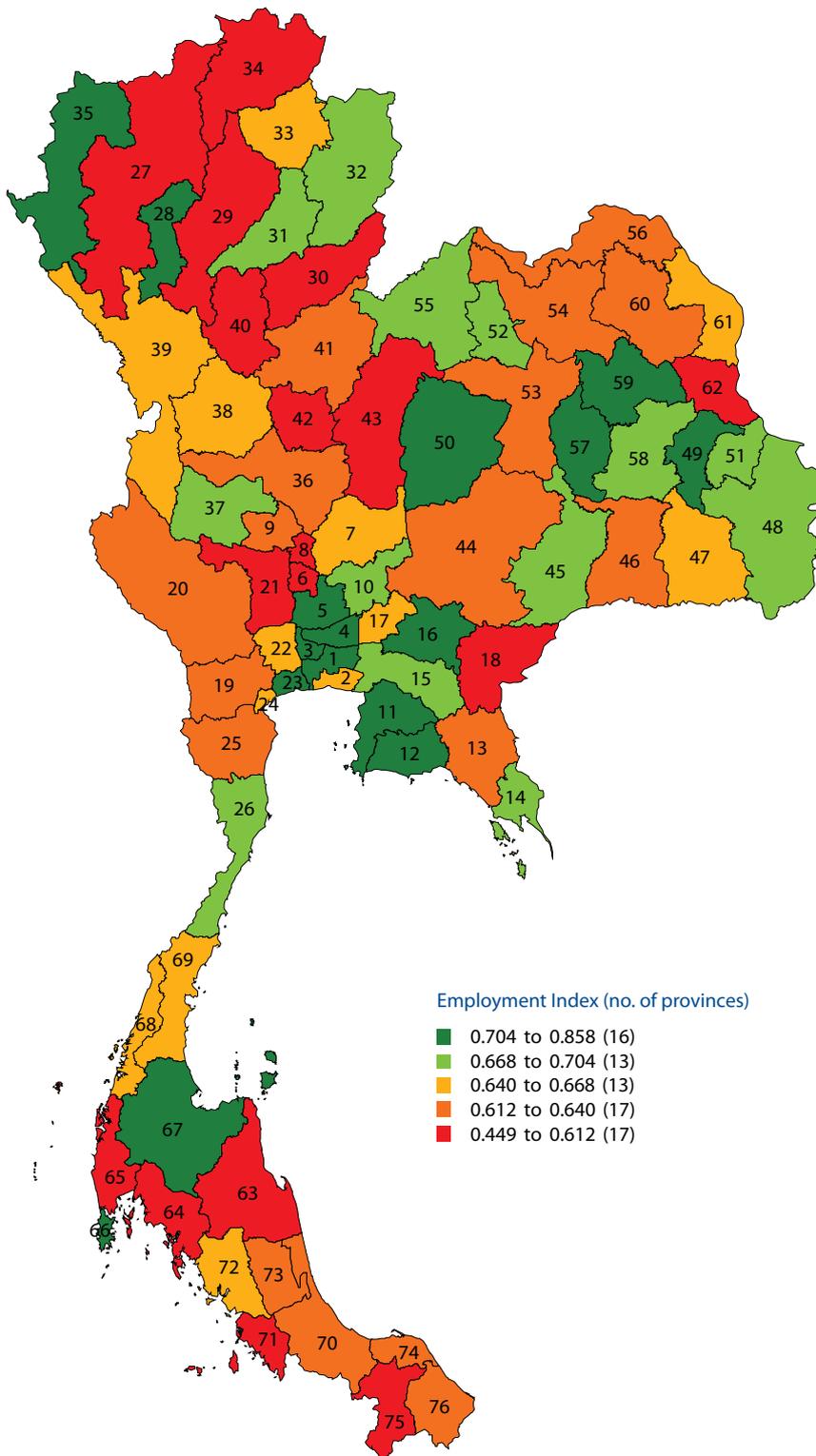
#### Underemployment

Underemployment is defined as working less than 35 hours/week while being willing to work more. Five provinces had zero underemployment.

Underemployment was exceptionally high in Phang-nga. This is partly due to the period of data collection. In most parts of the country, employment during the rainy season is generally higher and underemployment lower than at other times of the year. But in Phang-nga, heavy rain makes it difficult to work in rubber plantations, and dampens tourism, the two main sources of employment in the province.

Underemployment in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Rayong	0.0	72	Satun	5.2
2	Nakhon Nayok	0.0	73	Mukdahan	5.7
3	Uthai Thani	0.0	74	Nakhon Si Thammarat	7.1
4	Phuket	0.0	75	Krabi	8.1
5	Ranong	0.0	76	Phang-nga	19.5

Map 3: Employment Index



Rank		Code
1	Rayong	12
2	Phra Nakhon Si Ayutthaya	5
3	Bangkok Metropolis	1
4	Pathum Thani	4
5	Phuket	66
6	Samut Sakhon	23
7	Chon Buri	11
8	Lamphun	28
9	Prachin Buri	16
10	Yasothon	49
11	Kalasin	59
12	Maha Sarakham	57
13	Mae Hong Son	35
14	Nonthaburi	3
15	Surat Thani	67
16	Chaiyaphum	50
17	Trat	14
18	Roi Et	58
19	Prachuap Khiri Khan	26
20	Nan	32
21	Loei	55
22	Uthai Thani	37
23	Nong Bua Lam Phu	52
24	Chachoengsao	15
25	Buri Ram	45
26	Amnat Charoen	51
27	Ubon Ratchathani	48
28	Saraburi	10
29	Phrae	31
30	Chumphon	69
31	Tak	39
32	Nakhon Phanom	61
33	Nakhon Pathom	22
34	Kamphaeng Phet	38
35	Samut Songkhram	24
36	Lop Buri	7
37	Nakhon Nayok	17
38	Samut Prakan	2
39	Trang	72
40	Si Sa Ket	47
41	Ranong	68
42	Phayao	33
43	Songkhla	70
44	Phetchaburi	25
45	Chai Nat	9
46	Chanthaburi	13
47	Narathiwat	76
48	Khon Kaen	53
49	Sakon Nakhon	60
50	Ratchaburi	19
51	Udon Thani	54
52	Phitsanulok	41
53	Kanchanaburi	20
54	Nakhon Sawan	36
55	Nakhon Ratchasima	44
56	Phatthalung	73
57	Nong Khai	56
58	Surin	46
59	Pattani	74
60	Mukdahan	62
61	Suphan Buri	21
62	Chiang Mai	27
63	Sukhothai	40
64	Krabi	64
65	Phichit	42
66	Lampang	29
67	Ang Thong	6
68	Uttaradit	30
69	Chiang Rai	34
70	Satun	71
71	Nakhon Si Thammarat	63
72	Sing Buri	8
73	Phetchabun	43
74	Yala	75
75	Phang-nga	65
76	Sa Kaeo	18

## Workers with social security

In 2007, there were 9.18 million workers covered by the social security system, a number comprised mostly of employees 15–60 years of age in the formal sector, and those who continued to subscribe to the Fund after their employment had ended.

The industrial hub in the Central Region had high social security coverage as a large part of the work force was in the formal sector. All the bottom five provinces were in the Northeast where the work force was largely engaged in agriculture.

Workers with social security in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Samut Sakhon	94.2	72	Nong Khai	3.4
2	Pathum Thani	88.5	73	Kalasin	3.3
3	Samut Prakan	86.0	74	Si Sa Ket	2.2
4	Rayong	85.8	75	Nong Bua Lam Phu	1.8
5	Phra Nakhon Si Ayutthaya	85.1	76	Amnat Charoen	1.7

## Occupational injuries

The work safety situation has improved. In 2005, 214,235 workers or 29 per 1,000 employees reported having occupational injuries. This dropped to 198,652, or 24 per 1,000 employees in 2007. Agricultural provinces showed the lowest rates, while industrial provinces in the Central Region had high rates of occupational injuries. It should also be noted that Yala, Samut Sakhon and Samut Prakan were also among the bottom five in 2005.

Occupation injuries in 2007 ( per 1,000 employees under the Workers' Compensation Fund)					
Top five provinces			Bottom five provinces		
1	Mae Hong Son	3	72	Chachoengsao	32
2	Loei	4	73	Phetchaburi	32
3	Nakhon Phanom	4	74	Samut Sakhon	44
4	Yasothon	5	75	Samut Prakan	50
5	Maha Sarakham	6	76	Yala	52

## 4. Income Index and Indicators

Income is the basis for a decent standard of living, a safeguard against poverty. Debt is a sign of inadequate income. Income disparity reflects the distribution of wealth among members of the society.

*The income index consists of four indicators: household income, poverty incidence, households with debt, and income disparity measured by GINI.*

Bangkok, provinces in the Bangkok vicinity, and Phuket came out on top, while Northern and Northeastern provinces made up the bottom five on the income index.

Income Index			
Top five provinces		Bottom five provinces	
1	Bangkok Metropolis	72	Surin
2	Nonthaburi	73	Sa Kaeo
3	Nakhon Pathom	74	Nan
4	Samut Prakan	75	Si Sa Ket
5	Phuket	76	Mae Hong Son

### Household income

Average household income increased from 14,963 baht/month in 2004 to 18,660 baht/month in 2007. 71.6% of income was from employment. Bangkok and provinces in the vicinity enjoyed the highest income level. Besides Mae Hong Son in the North, the lowest incomes were recorded in the Northeastern provinces, especially those in the southern portion. The top provinces reported incomes 5.4 times higher than the lowest-income provinces.

Average household income in 2007 (baht/month)					
Top five provinces			Bottom five provinces		
1	Bangkok Metropolis	39,020	72	Si Sa Ket	10,782
2	Nonthaburi	32,743	73	Buri Ram	10,263
3	Surat Thani	26,207	74	Yasothon	10,039
4	Pathum Thani	26,107	75	Nakhon Phanom	10,009
5	Nakhon Pathom	25,447	76	Mae Hong Son	7,245

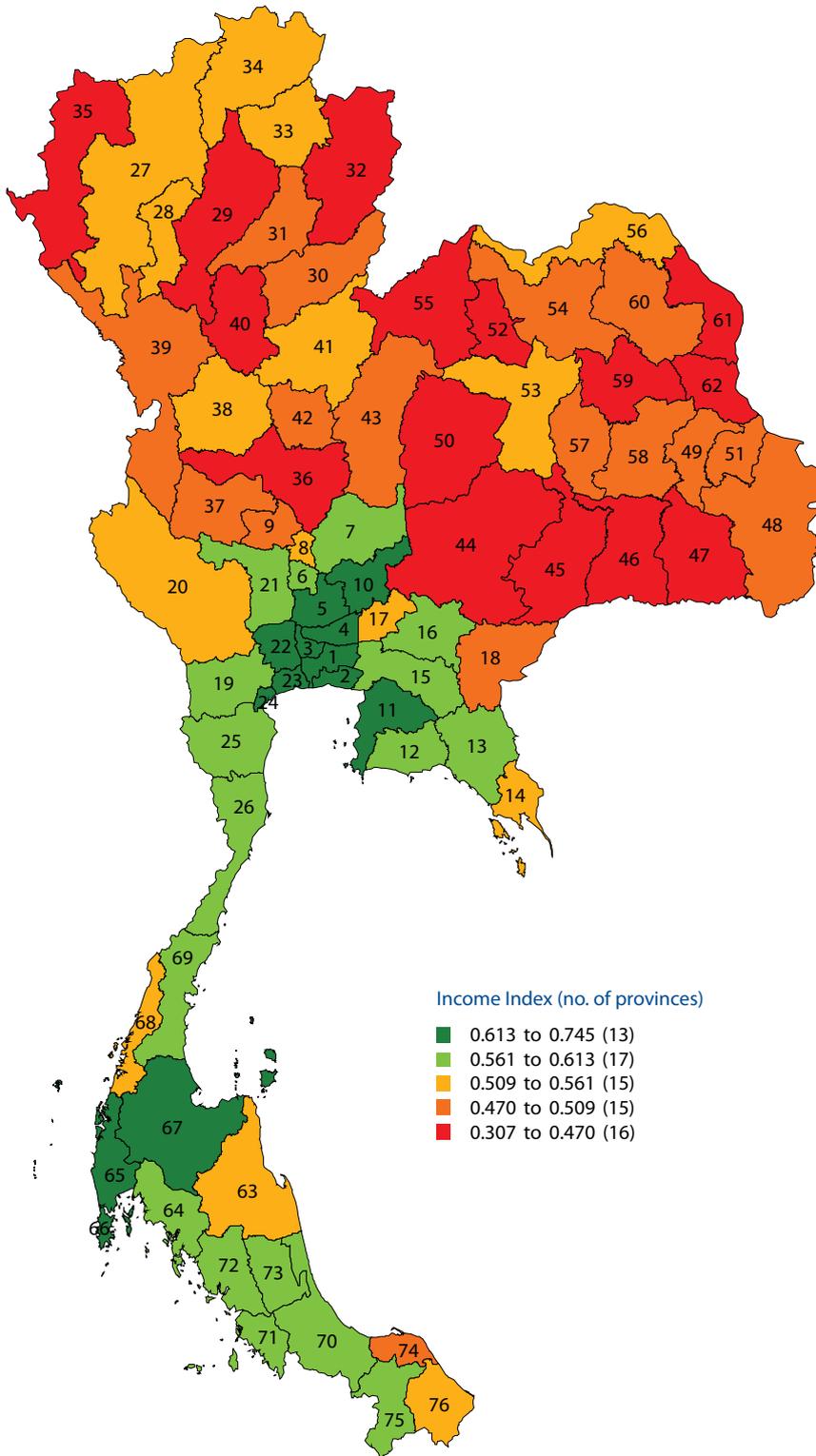
### Poverty incidence

Poverty incidence dropped from 14.93% in 2002 to 8.48% in 2007. The Northeast continued to have the highest poverty incidence at 13.05%, followed by the North, South, Central Region, and then Bangkok. Poverty incidence was higher among men than women. Female-headed households also had lower poverty incidence than male-headed households.

Phang-nga and Phuket, hit by the tsunami in 2004, showed no poverty incidence in 2007. Central Region provinces also fared well. The bottom five were comprised of two mountainous provinces in the North, two Northeastern provinces, and Narathiwat in the deep South. It is striking to note that in Mae Hong Son, two-thirds of the population were poor.

Poverty incidence in 2007 (%)			
Top five provinces		Bottom five provinces	
Phang-nga	0.0	Narathiwat	20.0
Phuket	0.0	Nan	20.2
Nonthaburi	0.1	Buri Ram	23.8
Phra Nakhon Si Ayutthaya	0.1	Si Sa Ket	28.7
Chon Buri	0.1	Mae Hong Son	65.2

Map 4: Income Index



Income Index (no. of provinces)

- 0.613 to 0.745 (13)
- 0.561 to 0.613 (17)
- 0.509 to 0.561 (15)
- 0.470 to 0.509 (15)
- 0.307 to 0.470 (16)

Rank		Code
1	Bangkok Metropolitan	1
2	Nonthaburi	3
3	Nakhon Pathom	22
4	Samut Prakan	2
5	Phuket	66
6	Pathum Thani	4
7	Samut Songkhram	24
8	Phang-nga	65
9	Samut Sakhon	23
10	Chon Buri	11
11	Phra Nakhon Si Ayutthaya	5
12	Saraburi	10
13	Surat Thani	67
14	Songkhla	70
15	Prachin Buri	16
16	Chachoengsao	15
17	Satun	71
18	Rayong	12
19	Yala	75
20	Trang	72
21	Phetchaburi	25
22	Suphan Buri	21
23	Chumphon	69
24	Phatthalung	73
25	Ratchaburi	19
26	Lop Buri	7
27	Prachuap Khiri Khan	26
28	Ang Thong	6
29	Krabi	64
30	Chanthaburi	13
31	Nakhon Nayok	17
32	Lamphun	28
33	Nong Khai	56
34	Ranong	68
35	Sing Buri	8
36	Narathiwat	76
37	Trat	14
38	Kanchanaburi	20
39	Nakhon Si Thammarat	63
40	Phitsanulok	41
41	Chiang Mai	27
42	Khon Kaen	53
43	Chiang Rai	34
44	Kamphaeng Phet	38
45	Phayao	33
46	Udon Thani	54
47	Phrae	31
48	Phichit	42
49	Roi Et	58
50	Chai Nat	9
51	Yasothon	49
52	Phetchabun	43
53	Maha Sarakham	57
54	Pattani	74
55	Ubon Ratchathani	48
56	Uttaradit	30
57	Tak	39
58	Amnat Charoen	51
59	Uthai Thani	37
60	Sakon Nakhon	60
61	Lampang	29
62	Nakhon Phanom	61
63	Nakhon Ratchasima	44
64	Nakhon Sawan	36
65	Sukhothai	40
66	Mukdahan	62
67	Chaiyaphum	50
68	Kalasin	59
69	Nong Bua Lam Phu	52
70	Buri Ram	45
71	Loei	55
72	Surin	46
73	Sa Kaeo	18
74	Nan	32
75	Si Sa Ket	47
76	Mae Hong Son	35

## Households with debt

In 2007, 63.3% of all households were indebted. The average amount of debt increased from 82,485 baht to 116,585 baht since 2003. A large part of the debt was caused by consumption, purchase of home and land, and farming.

There is no simple way to explain indebtedness. Rich households may or may not have debt. When they do, it is largely investment debt. Poor households may or may not have debt due to their poor credit worth. In any case, indebtedness means less income in the future. Samut Songkhram, a showcase of the sufficiency economy, had the lowest indebtedness. Narathiwat and Mae Hong Son, two of the bottom five provinces on poverty incidence, also had low indebtedness rate. Indebtedness was also low in Phuket and Samut Prakan, 7th and 15th on household income. All of the bottom five provinces on indebtedness were in the Northeast.

It is also interesting to note that Bangkok, Nonthaburi, Pathum Thani, and Samut Prakan all had relatively high household incomes, but also high household expenditure and large amount of debt. The expenditure:income ratio was .69. The Northeast, with the highest proportion of households indebted, had the lowest income and lowest expenditure, but the smallest amount of debt. The expenditure:income ratio was .84, leaving a very small sum for savings, which means low debt-financing capacity.

Households with debt in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Samut Songkhram	14.8	72	Amnat Charoen	80.6
2	Narathiwat	36.7	73	Mukdahan	80.7
3	Phuket	38.6	74	Loei	82.1
4	Samut Prakan	39.4	75	Si Sa Ket	83.0
5	Mae Hong Son	42.6	76	Maha Sarakham	88.9

## GINI

Despite decades of development, there is little sign of a trickle-down effect; GINI remained at 53.5 in 2007. At the provincial level, disparity was lowest in the Bangkok vicinity and Phang-nga in the South. Three of the bottom five provinces were in the Northeast. Disparity was highest in Mae Hong Son and Sa Kaeo, border provinces in the North and the East.

GINI in 2007					
Top five provinces			Bottom five provinces		
1	Nakhon Pathom	35.9	72	Nong Bua Lam Phu	56.1
2	Samut Prakan	37.3	73	Surin	56.3
3	Samut Sakhon	37.6	74	Loei	56.9
4	Phang-nga	38.1	75	Mae Hong Son	57.6
5	Pathum Thani	38.5	76	Sa Kaeo	58.9

## 5. Housing and Living Environment Index and Indicators

Secure housing in a safe environment, furnished with basic household appliances, are fundamental for a decent livelihood.

*The housing and living environment index consists of five indicators: households living in own house on own land, households with refrigerator, households cooking with electric or gas stove, population affected by drought, population affected by flood.*

Southern provinces scored high on housing and living environment, while two border provinces in the North, and three Northeastern provinces were among the bottom five.

Housing and Living Environment Index			
Top five provinces		Bottom five provinces	
1	Phatthalung	72	Tak
2	Phetchaburi	73	Maha Sarakham
3	Satun	74	Yasothon
4	Nakhon Nayok	75	Kalasin
5	Nakhon Si Thammarat	76	Mae Hong Son

### Households living in own house on own land

Three-fourths of Thai households lived in their own house on their own land. 92.4% of the Northeastern households had housing security, the highest rate in the country, followed by the North, the South, and the Central Region. Bangkok and provinces in the vicinity, plus Chon Buri, an industrial city east of Bangkok, had high rates of rentals, and made up the bottom five.

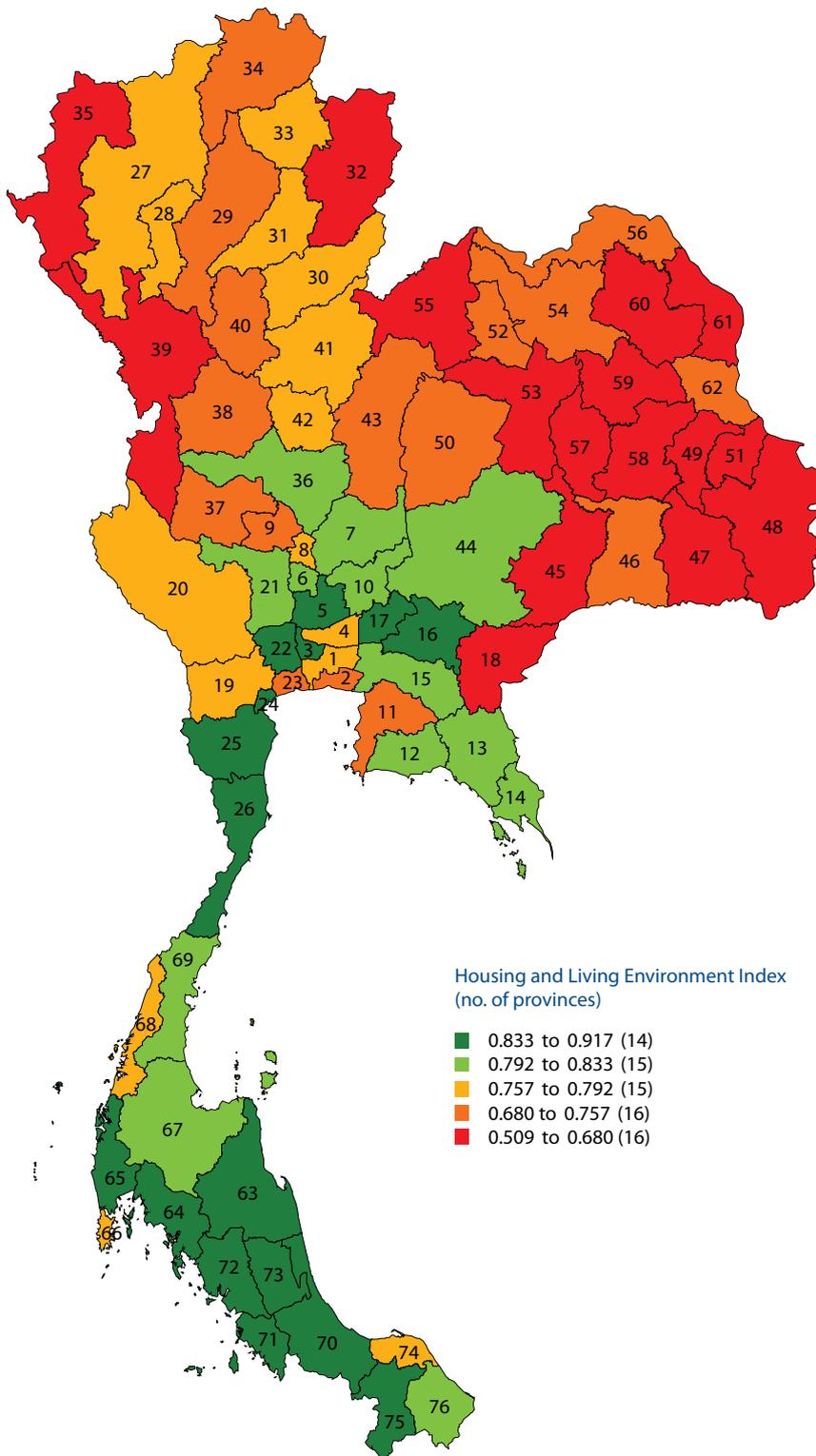
Households living in own house on own land in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Si Sa Ket	97.4	72	Pathum Thani	40.0
2	Amnat Charoen	96.9	73	Bangkok Metropolis	33.7
3	Nakhon Phanom	96.2	74	Chon Buri	30.6
4	Roi Et	95.9	75	Samut Sakhon	29.5
5	Nong Khai	95.8	76	Samut Prakan	21.0

### Households with refrigerator

Nearly all households had sanitation, water, and electricity. 84% also had a refrigerator.

Households with refrigerator in 2007 (%)			
Top five provinces		Bottom five provinces	
Nakhon Nayok	95.1	Narathiwat	71.1
Chachoengsao	93.3	Surin	71.1
Samut Songkhram	92.3	Pattani	64.4
Uttaradit	92.3	Si Sa Ket	63.9
Prachin Buri	92.3	Mae Hong Son	41.5

Map 5: Housing and Living Environment Index



Rank		Code
1	Phatthalung	73
2	Phetchaburi	25
3	Satun	71
4	Nakhon Nayok	17
5	Nakhon Si Thammarat	63
6	Yala	75
7	Phang-nga	65
8	Songkhla	70
9	Prachin Buri	16
10	Trang	72
11	Samut Songkhram	24
12	Krabi	64
13	Nakhon Pathom	22
14	Prachuap Khiri Khan	26
15	Trat	14
16	Chumphon	69
17	Ang Thong	6
18	Surat Thani	67
19	Chachoengsao	15
20	Rayong	12
21	Narathiwat	76
22	Nakhon Sawan	36
23	Chanthaburi	13
24	Nonthaburi	3
25	Suphan Buri	21
26	Saraburi	10
27	Phra Nakhon Si Ayutthaya	5
28	Lop Buri	7
29	Nakhon Ratchasima	44
30	Sing Buri	8
31	Uttaradit	30
32	Lamphun	28
33	Ratchaburi	19
34	Kanchanaburi	20
35	Phuket	66
36	Ranong	68
37	Pathum Thani	4
38	Pattani	74
39	Phichit	42
40	Phitsanulok	41
41	Phayao	33
42	Phrae	31
43	Chiang Mai	27
44	Bangkok Metropolitan	1
45	Chai Nat	9
46	Chon Buri	11
47	Sukhothai	40
48	Chaiyaphum	50
49	Samut Sakhon	23
50	Phetchabun	43
51	Uthai Thani	37
52	Lampang	29
53	Chiang Rai	34
54	Kamphaeng Phet	38
55	Nong Bua Lam Phu	52
56	Samut Prakan	2
57	Nong Khai	56
58	Udon Thani	54
59	Surin	46
60	Mukdahan	62
61	Amnat Charoen	51
62	Sakon Nakhon	60
63	Si Sa Ket	47
64	Nakhon Phanom	61
65	Loei	55
66	Sa Kaeo	18
67	Nan	32
68	Khon Kaen	53
69	Ubon Ratchathani	48
70	Roi Et	58
71	Buri Ram	45
72	Tak	39
73	Maha Sarakham	57
74	Yasothon	49
75	Kalasin	59
76	Mae Hong Son	35

## Households cooking with gas or electric stove

Three-fifths of the population cooked with gas or an electric stove. The South reported the highest percentage, while the Northeast reported the lowest.

Households cooking with gas or electric stove in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Phang-nga	95.6	72	Roi Et	21.2
2	Satun	95.4	73	Si Sa Ket	20.2
3	Songkhla	93.0	74	Maha Sarakham	19.1
4	Rayong	92.8	75	Mukdahan	18.4
5	Krabi	92.0	76	Amnat Charoen	17.7

## Population affected by drought

The 2007 drought hit 66 provinces, affecting 16.7 million people. Northeastern provinces were the hardest hit, plus Sa Kaeo on the eastern border, and Tak on the western border.

Population affected by drought in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Bangkok Metropolis / Samut Prakan	0.0	72	Tak	53.6
2	Nonthaburi / Pathum Thani	0.0	73	Yasothon	57.2
3	Nakhon Pathom / Samut Sakhon	0.0	74	Buri Ram	63.8
4	Samut Songkhram / Prachuap Khiri Khan	0.0	75	Sa Kaeo	64.9
5	Pattani / Phang-nga	0.0	76	Maha Sarakham	70.0

## Population affected by flood

In 2007, there were 13 floods in 54 provinces, resulting in 36 casualties, and 2.3 million people adversely affected. Two flash floods in 2 provinces killed 46 people and injured 25.

Population affected by flood in 2007 (%)					
Top five provinces			Bottom five provinces		
22 provinces not affected by flood.			72	Chai Nat	12.3
			73	Roi Et	22.2
			74	Uthai Thani	23.3
			75	Sing Buri	24.0
			76	Kalasin	40.5

## 6. Family and Community Life Index and Indicators

The family is the most fundamental unit of society. Rapid social changes and modern life styles have placed both urban and rural families and communities under strain. Strengthening family ties and community values is an important step towards addressing social maladies and advancing human development.

*The family and community life index consists of six indicators: children in distress, working children, single-headed households, elderly living alone, violent crimes reported, drug-related arrests.*

Northeastern provinces ranked highest. Prolonged violence placed the three Southernmost provinces in the bottom five. Joining them at the bottom were Mae Hong Son in the mountainous North, and Chon Buri, an industrial city near Bangkok.

Family and Community Life Index			
Top five provinces		Bottom five provinces	
1	Udon Thani	72	Chon Buri
2	Nong Bua Lam Phu	73	Yala
3	Loei	74	Pattani
4	Uttaradit	75	Narathiwat
5	Sakon Nakhon	76	Mae Hong Son

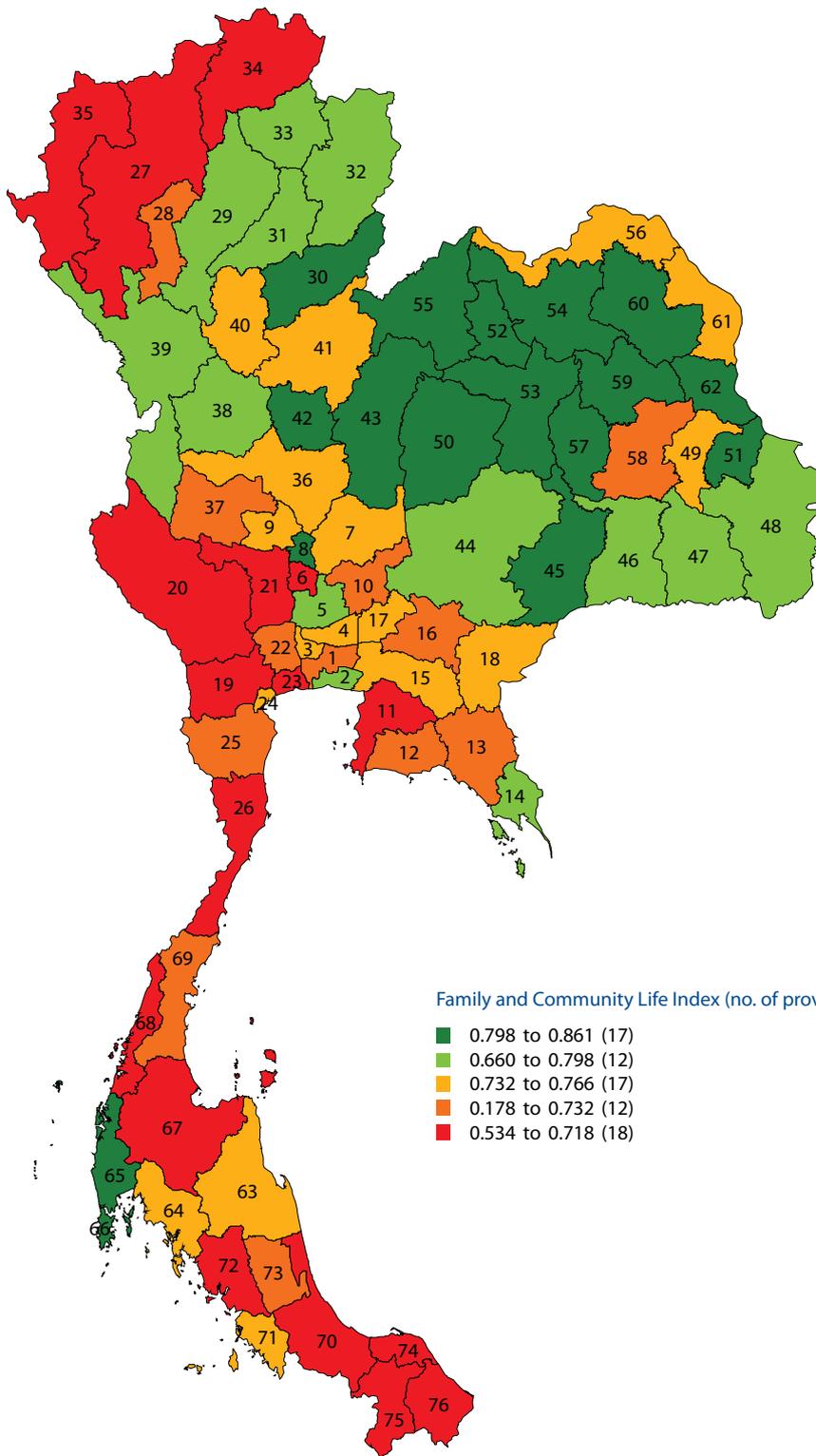
### Children in distress

The number of children in distress is a good indicator of family and social health. The number of orphans, abandoned children, children affected by AIDS and children with no birth certificate was very high in Northern provinces. Two deep South provinces affected by continued violence – Narathiwat and Pattani – also recorded a large number of children in distress. (Yala had 65.4 children in distress per 100,000 population)

Children in distress in 2007 (per 100,000 population)					
Top five provinces			Bottom five provinces		
1	Nonthaburi	0.5	72	Narathiwat	129.4
2	Samut Songkhram	1.0	73	Chiang Mai	177.3
3	Samut Prakan	1.6	74	Chiang Rai	192.0
4	Samut Sakhon	1.9	75	Phayao	199.8
5	Bangkok Metropolis	2.2	76	Mae Hong Son	308.1

Note: There are no data for Bangkok. An average figure of provinces in the Bangkok vicinity – Nonthaburi, Pathum Thani, Samut Prakan, Samut Sakhon, and Nakhon Pathom, is used as proxy for Bangkok.

**Map 6: Family and Community Life Index**



Family and Community Life Index (no. of provinces)

- 0.798 to 0.861 (17)
- 0.660 to 0.798 (12)
- 0.732 to 0.766 (17)
- 0.178 to 0.732 (12)
- 0.534 to 0.718 (18)

Rank		Code
1	Udon Thani	54
2	Nong Bua Lam Phu	52
3	Loei	55
4	Uttaradit	30
5	Sakon Nakhon	60
6	Buri Ram	45
7	Kalasin	59
8	Chaiyaphum	50
9	Phang-nga	65
10	Mukdahan	62
11	Khon Kaen	53
12	Phichit	42
13	Phuket	66
14	Maha Sarakham	57
15	Amnat Charoen	51
16	Phetchabun	43
17	Sing Buri	8
18	Nan	32
19	Ubon Ratchathani	48
20	Si Sa Ket	47
21	Trat	14
22	Tak	39
23	Kamphaeng Phet	38
24	Lampang	29
25	Phrae	31
26	Surin	46
27	Nakhon Ratchasima	44
28	Samut Prakan	2
29	Phra Nakhon Si Ayutthaya	5
30	Pathum Thani	4
31	Nakhon Si Thammarat	63
32	Nong Khai	56
33	Nonthaburi	3
34	Nakhon Phanom	61
35	Samut Songkhram	24
36	Phitsanulok	41
37	Yasothon	49
38	Krabi	64
39	Chachoengsao	15
40	Nakhon Sawan	36
41	Sa Kaeo	18
42	Sukhothai	40
43	Lop Buri	7
44	Satun	71
45	Nakhon Nayok	17
46	Chai Nat	9
47	Chanthaburi	13
48	Chumphon	69
49	Nakhon Pathom	22
50	Bangkok Metropolis	1
51	Rayong	12
52	Uthai Thani	37
53	Saraburi	10
54	Prachin Buri	16
55	Roi Et	58
56	Phetchaburi	25
57	Phatthalung	73
58	Lamphun	28
59	Songkhla	70
60	Trang	72
61	Samut Sakhon	23
62	Ranong	68
63	Suphan Buri	21
64	Chiang Mai	27
65	Surat Thani	67
66	Kanchanaburi	20
67	Ratchaburi	19
68	Chiang Rai	34
69	Phayao	33
70	Prachuap Khiri Khan	26
71	Ang Thong	6
72	Chon Buri	11
73	Yala	75
74	Pattani	74
75	Narathiwat	76
76	Mae Hong Son	35

## Working children

About 500,000 children aged 15-17 left school in order to work to support their family. The percentage declined from 18.5% in 2005 to 16.2% in 2007. Northern provinces fared well on this front, with the exception of Mae Hong Son which had the highest rate of working children.

Working children aged 15-17 in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Lampang	0.8	72	Krabi	27.2
2	Lamphun	4.3	73	Pattani	28.4
3	Phra Nakhon Si Ayutthaya	6.8	74	Kanchanaburi	29.0
4	Phitsanulok	6.9	75	Samut Sakhon	34.7
5	Uttaradit	7.1	76	Mae Hong Son	42.9

## Single-headed households

The percentage of single-headed households increased from 17.2% in 2005 to 18.1% in 2007. Divorce rose from 1 per 4.27 married couples in 2005 to 1 per 3.03 married couples in 2008.

Single-headed households in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Mukdahan	10.0	72	Ratchaburi	23.7
2	Samut Prakan	12.3	73	Ang Thong	24.4
3	Pathum Thani	13.1	74	Roi Et	24.5
4	Nong Bua Lam Phu	13.3	75	Yasothon	26.0
5	Nonthaburi	14.0	76	Lamphun	26.5

## Elderly living alone

In 2007, the elderly (60 years and over) accounted for 10.7% of the population, compared with 9.4% in 2002. The most important challenges for the elderly are health and income. Most elderly lived with their families and children. But the percentage of elderly living alone increased from 6.3% in 2002 to 7.8% in 2007. Half of them admitted to being lonely and needing various forms of support including financial, especially in times of sickness. Northern provinces led the rest of the country in this regard.

Elderly living alone in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Phuket	2.3	72	Phitsanulok	12.5
2	Loei	3.5	73	Sukhothai	12.6
3	Khon Kaen	3.9	74	Rayong	12.6
4	Nakhon Pathom	4.3	75	Phayao	13.0
5	Nong Bua Lam Phu	4.5	76	Mae Hong Son	16.1

## Violent crimes reported

Violent crimes, namely murder, gang robbery, burglary, kidnapping, and arson, dropped from 16 to 13 per 100,000 population between 2005 and 2007. Southern provinces, especially the three provinces in the deep South, suffered from very high violent crime rates. The rate was also high at 22 in Bangkok, but low at 4 per 100,000 population in the Northeast.

Violent crimes reported in 2007 (per 100,000 population)					
Top five provinces			Bottom five provinces		
1	Yasothon	2	72	Surat Thani	32
2	Buri Ram	3	73	Songkhla	33
3	Surin	3	74	Narathiwat	57
4	Loei	3	75	Pattani	63
5	Si Sa Ket	3	76	Yala	64

## Drug-related arrests

Drug-related arrests increased from 170 per 100,000 population in 2005 to 239 in 2007. Family trouble often leads to drug problems among the youth. Drug-related offenses were second only to robbery, among youth in probation facilities.

The highest record of drug-related arrests was in Chon Buri, followed by Bangkok and the vicinity, and the Central Region. Northeast had the lowest rate of drug-related arrests.

Drug-related arrests in 2007 (per 100,000 population)					
Top five provinces			Bottom five provinces		
1	Nong Bua Lam Phu	43	72	Samut Prakan	609
2	Surin	49	73	Nakhon Pathom	668
3	Si Sa Ket	49	74	Nonthaburi	670
4	Buri Ram	57	75	Bangkok Metropolis	684
5	Phetchabun	58	76	Chon Buri	972

## 7. Transport and Communication Index and Indicators

Mobility and connectivity enhance people's potential and enrich their lives.

*The transport and communication index consists of six indicators: villages with all-season road, registered vehicles, road accidents, households with TV, population with mobile phone, population with internet access.*

Phuket, the Southern tourism hub, Bangkok, and the Bangkok vicinity, plus Rayong – the industrial hub east of Bangkok ranked best in transport and communication, while Mae Hong Son, and Northeastern provinces lagged behind.

Transport and Communication Index			
Top five provinces		Bottom five provinces	
1	Phuket	72	Kalasin
2	Bangkok Metropolis	73	Nong Khai
3	Nonthaburi	74	Buri Ram
4	Nakhon Pathom	75	Si Sa Ket
5	Rayong	76	Mae Hong Son

### Villages with all-season main road

Road network is the backbone of Thailand's transport system, with a total of 212,060 kilometres of roads including 61,747 kilometres of highways, 313 kilometres of motorways, 42,500 kilometres of rural roads, and 107,500 kilometres of local roads.

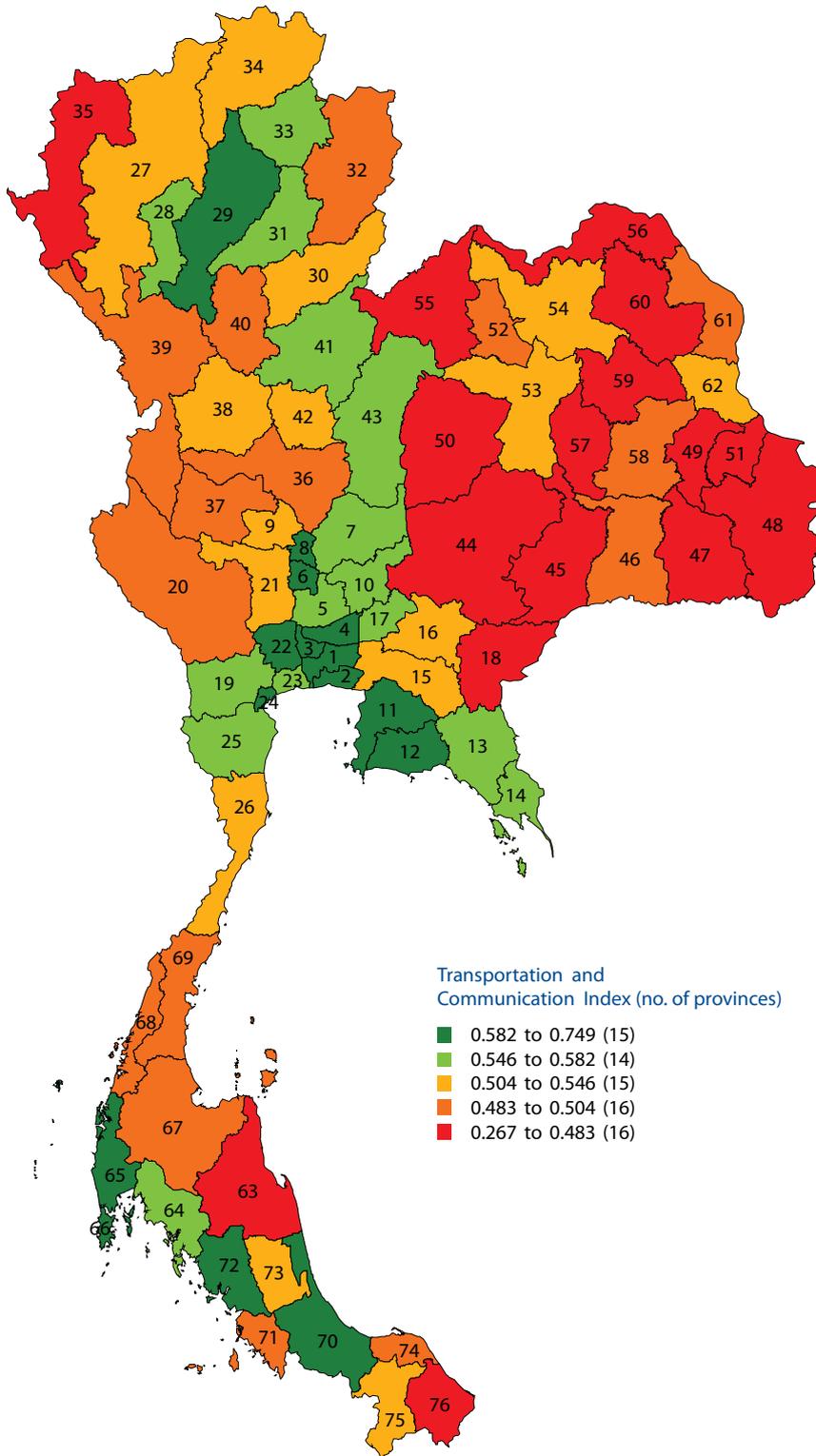
The road network was most extensive in Phuket, Bangkok, and the Bangkok vicinity. At the other end of the spectrum, two-thirds of villages in Mae Hong Son did not have all-season roads.

Villages with all-season main road in 2007 (%)			
Top five provinces		Bottom five provinces	
Bangkok Metropolis	91	Buri Ram	38
Phuket	91	Prachuap Khiri Khan	38
Sing Buri	86	Si Sa Ket	36
Nonthaburi	85	Nakhon Sawan	36
Pathum Thani	83	Mae Hong Son	33

Notes: 1) There are no data for Bangkok. Phuket, with the highest percentage, is used as proxy for Bangkok.

2) Data cover only non- municipal areas.

**Map 7: Transport and Communication Index**



Rank		Code
1	Phuket	66
2	Bangkok Metropolis	1
3	Nonthaburi	3
4	Nakhon Pathom	22
5	Rayong	12
6	Sing Buri	8
7	Songkhla	70
8	Pathum Thani	4
9	Lampang	29
10	Trang	72
11	Chon Buri	11
12	Samut Songkhram	24
13	Samut Prakan	2
14	Ang Thong	6
15	Phang-nga	65
16	Samut Sakhon	23
17	Saraburi	10
18	Ratchaburi	19
19	Chanthaburi	13
20	Phrae	31
21	Lamphun	28
22	Lop Buri	7
23	Phayao	33
24	Nakhon Nayok	17
25	Petchaburi	25
26	Phitsanulok	41
27	Phra Nakhon Si Ayutthaya	5
28	Trat	14
29	Krabi	64
30	Yala	75
31	Chiang Mai	27
32	Chachoengsao	15
33	Chiang Rai	34
34	Prachuap Khiri Khan	26
35	Prachin Buri	16
36	Chai Nat	9
37	Mukdahan	62
38	Uttaradit	30
39	Phatthalung	73
40	Suphan Buri	21
41	Phichit	42
42	Udon Thani	54
43	Kamphaeng Phet	38
44	Khon Kaen	53
45	Sukhothai	40
46	Surat Thani	67
47	Kanchanaburi	20
48	Chumphon	69
49	Nakhon Sawan	36
50	Ranong	68
51	Nan	32
52	Petchabun	43
53	Nong Bua Lam Phu	52
54	Nakhon Phanom	61
55	Surin	46
56	Uthai Thani	37
57	Satun	71
58	Pattani	74
59	Tak	39
60	Roi Et	58
61	Ubon Ratchathani	48
62	Yasothon	49
63	Nakhon Ratchasima	44
64	Nakhon Si Thammarat	63
65	Amnat Charoen	51
66	Loei	55
67	Maha Sarakham	57
68	Chaiyaphum	50
69	Sakon Nakhon	60
70	Sa Kaeo	18
71	Narathiwat	76
72	Kalasin	59
73	Nong Khai	56
74	Buri Ram	45
75	Si Sa Ket	47
76	Mae Hong Son	35

## Registered vehicles

In 2007, there were 24.5 million registered vehicles in Thailand, of which 64% were motorcycles. In Phuket and Bangkok, the vehicle:population ratio was almost 1. The other high-ratio provinces were also high-income, industrial provinces.

Mae Hong Son and Si Sa Ket were at the low end. The very low ratio in the Bangkok vicinity was due to the fact that most vicinity dwellers purchased and registered their vehicles in Bangkok where there were more choices of distributors and agents.

Registered vehicles in 2007 (per 1,000 population)					
Top five provinces			Bottom five provinces		
1	Phuket	974	72	Si Sa Ket	177
2	Bangkok Metropolis	970	73	Mae Hong Son	141
3	Rayong	681	74	Nonthaburi	132
4	Chon Buri	667	75	Pathum Thani	106
5	Lamphun	542	76	Samut Prakan	76

## Road accidents

Road accidents are the number three cause of death. In 2007, there were 100,883 road accidents causing 11,843 deaths, 14,800 severe injuries, and 42,801 minor injuries. Speeding and drunk-driving were important factors.

While transport was more convenient in industrial, high-income provinces, the risk was also higher. Remote provinces enjoyed much lower accident rates.

Road accidents in 2007 (per 100,000 population)					
Top five provinces			Bottom five provinces		
1	Narathiwat	7	72	Satun	276
2	Mae Hong Son	13	73	Chon Buri	300
3	Pattani	21	74	Chiang Mai	384
4	Kalasin	25	75	Phuket	386
5	Roi Et	30	76	Bangkok Metropolis	816

## Households with television

Television is the people's choice of media. 95% of Thai households had TV while only 60% had radio. The bottom five provinces were remote provinces, where transmission could be difficult.

Households with TV (%)					
Top five provinces			Bottom five provinces		
1	Chachoengsao	99	72	Tak	91
2	Nonthaburi	98	73	Nan	90
3	Pathum Thani	98	74	Narathiwat	87
4	Phuket	98	75	Pattani	84
5	Kalasin / Nong Bua Lam Phu	98	76	Mae Hong Son	58

## Population with mobile phones

Mobile phones have become a major communication device. Half of the Thai population owned a mobile phone. The concentration was highest in Bangkok, Phuket, and the Bangkok vicinity, but lowest in the Northeast and the deep South.

Population with mobile phone in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Nonthaburi	99	72	Pattani	32.2
2	Bangkok Metropolis	98	73	Nakhon Phanom	31.6
3	Pathum Thani	98	74	Narathiwat	29.9
4	Samut Prakan	98	75	Si Sa Ket	29.2
5	Phuket	98	76	Mae Hong Son	12.4

## Population with internet access

The population with internet access increased from 12% in 2005 to 15.5% in 2007. The gap between Bangkok and the Northeast was still quite large. At the provincial level, Bangkok and major provincial cities scored high. The lowest access was in Narathiwat and Pattani in the deep South, Nong Khai in the Northeast, and surprisingly Samut Sakhon and Nakhon Nayok – two provinces with close proximity to Bangkok.

Population with internet access in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Bangkok Metropolis	29.9	72	Pattani	8.7
2	Nonthaburi	29.7	73	Nong Khai	8.6
3	Phuket	22.1	74	Samut Sakhon	8.6
4	Chiang Mai	20.9	75	Nakhon Nayok	8.4
5	Songkhla	20.0	76	Narathiwat	6.9

## 8. Participation Index and Indicators

Political and social participation enhances people's lives. It also plays an important role in community empowerment and democratic development.

*The participation index consists of four indicators: voter turnout, community groups, households participating in local groups, household participating in social services.*

Northern provinces and Southern provinces ranked high on participation, while people in Bangkok and the vicinity, and industrial provinces to the east of Bangkok did not participate actively in politics or community services.

Participation Index			
Top five provinces		Bottom five provinces	
1	Mukdahan	72	Chon Buri
2	Chumphon	73	Rayong
3	Amnat Charoen	74	Nonthaburi
4	Phang-nga	75	Samut Sakhon
5	Maha Sarakham	76	Bangkok Metropolis

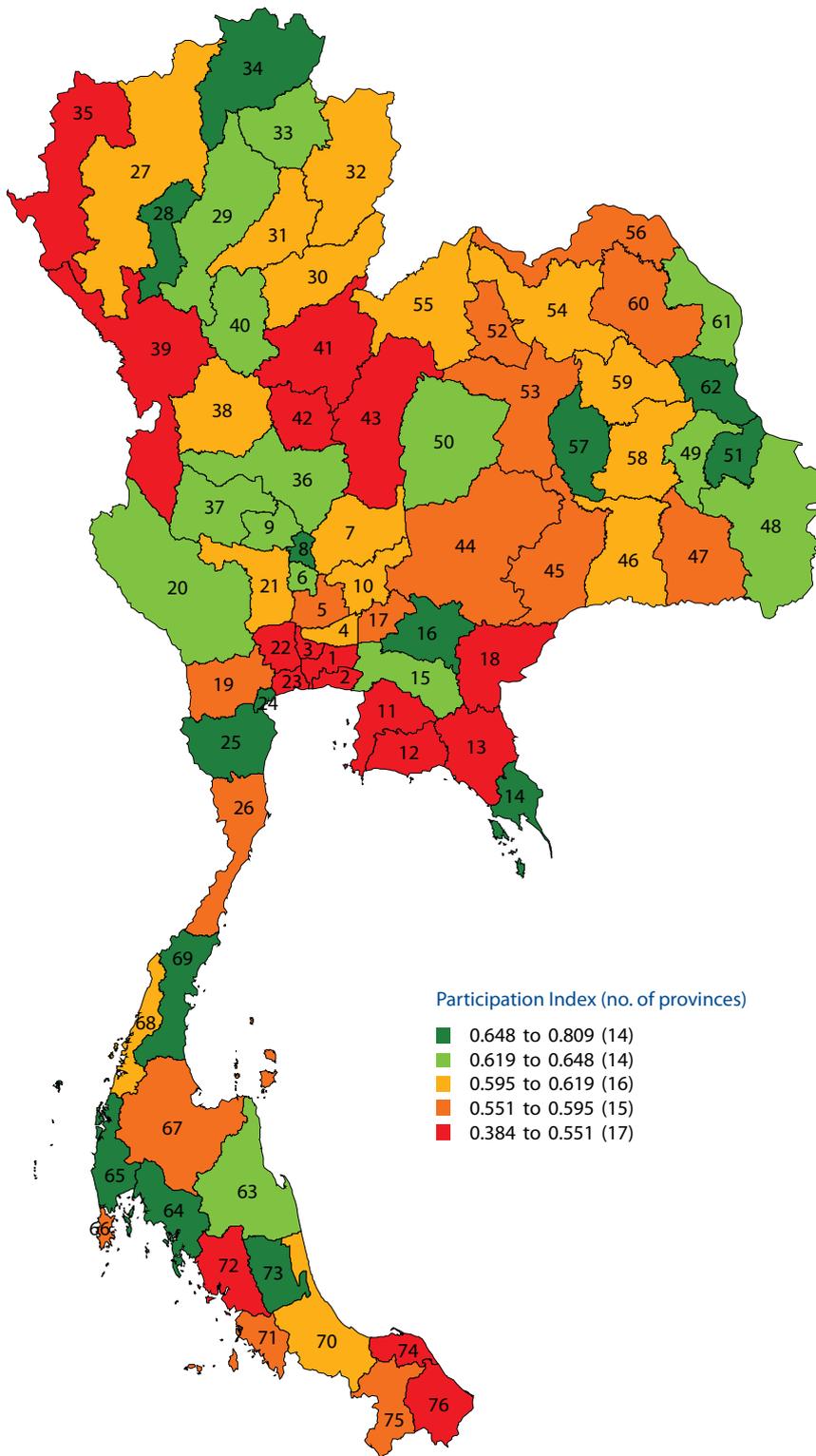
### Voter turnout

Voter turnout increased from 70% in 2001 to 72.5% in 2005 and 74.5% in 2007. It was highest at 78% in the South, followed by the North, the Central Region, the Northeast, and Bangkok. Gender is not a factor in voter turnout. But women lag behind men in national and local decision-making. Women have only 16% of the seats in the present Senate, and 11.6% in the House of Representatives.

At the provincial level, Lamphun showed the highest rate, while all of the bottom five were in the Northeast.

Voter turnout in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Lamphun	88.9	72	Roi Et	68.2
2	Sing Buri	85.5	73	Nong Khai	68.2
3	Phatthalung	84.5	74	Buri Ram	67.9
4	Tak	84.4	75	Nakhon Phanom	67.6
5	Chiang Mai	83.2	76	Sakon Nakhon	66.7

Map 8. Participation Index



Rank		Code
1	Mukdahan	62
2	Chumphon	69
3	Amnat Charoen	51
4	Phang-nga	65
5	Maha Sarakham	57
6	Sing Buri	8
7	Phatthalung	73
8	Krabi	64
9	Lamphun	28
10	Chiang Rai	34
11	Trat	14
12	Prachin Buri	16
13	Samut Songkhram	24
14	Phetchaburi	25
15	Ang Thong	6
16	Sukhothai	40
17	Lampang	29
18	Ubon Ratchathani	48
19	Chaiyaphum	50
20	Nakhon Phanom	61
21	Nakhon Si Thammarat	63
22	Chai Nat	9
23	Yasothon	49
24	Kanchanaburi	20
25	Uthai Thani	37
26	Chachoengsao	15
27	Phayao	33
28	Nakhon Sawan	36
29	Roi Et	58
30	Nan	32
31	Udon Thani	54
32	Phrae	31
33	Lop Buri	7
34	Saraburi	10
35	Surin	46
36	Pathum Thani	4
37	Kalasin	59
38	Kamphaeng Phet	38
39	Ranong	68
40	Loei	55
41	Songkhla	70
42	Uttaradit	30
43	Suphan Buri	21
44	Chiang Mai	27
45	Phuket	66
46	Nakhon Ratchasima	44
47	Si Sa Ket	47
48	Surat Thani	67
49	Sakon Nakhon	60
50	Nong Bua Lam Phu	52
51	Prachuap Khiri Khan	26
52	Khon Kaen	53
53	Pra Nakhon Si Ayutthaya	5
54	Satun	71
55	Buri Ram	45
56	Ratchaburi	19
57	Nakhon Nayok	17
58	Yala	75
59	Nong Khai	56
60	Narathiwat	76
61	Trang	72
62	Pattani	74
63	Phichit	42
64	Sa Kaeo	18
65	Mae Hong Son	35
66	Tak	39
67	Phetchabun	43
68	Nakhon Pathom	22
69	Phitsanulok	41
70	Chanthaburi	13
71	Samut Prakan	2
72	Chon Buri	11
73	Rayong	12
74	Nonthaburi	3
75	Samut Sakhon	23
76	Bangkok Metropolis	1

## Community groups

In 2007, there were a total of 32,291 community organizations, or 51 community organizations per 100,000 population. These included community business and occupational groups, cultural groups, local wisdom groups, community welfare groups, environmental groups, community finance groups, community media groups, and community networks. The community organization:population ratio was highest in the South, followed by the Northeast, the North, the Central Plain, and Bangkok.

Community groups in 2007 (per 100,000 population)					
Top five provinces			Bottom five provinces		
1	Mukdahan	305.0	72	Pathum Thani / Samut Prakan	12.0
2	Chumphon	272.2	73	Phetchabun	11.5
3	Trat	236.2	74	Kamphaeng Phet	10.2
4	Amnat Charoen	212.8	75	Bangkok Metropolis	5.5
5	Phang-nga	209.8	76	Nonthaburi	4.3

## Households participating in local groups

The rate of households participating in local groups was very high in rural areas and exceptionally high in Northeastern provinces. Relatively low participation rate was observed in the Bangkok vicinity and in large provincial cities.

Households participating in local groups in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Nakhon Phanom	100.0	72	Mae Hong Son / Samut Prakan	86.8
2	Roi Et	99.9	73	Rayong	85.2
3	Phuket	99.8	74	Samut Sakhon	84.5
4	Ubon Ratchathani	99.6	75	Bangkok Metropolis	82.7
5	Yasothon	99.6	76	Nonthaburi	82.7

Notes: 1). There are no data for Bangkok. Nonthaburi, which has the lowest value, is used as proxy for Bangkok.  
2). Data cover only non-municipal areas.

## Households participating in social services

The percentage of households participating in social services was very high in rural provinces. All households participated in social services in six provinces, five from the Northeast, and Nakhon Sawan in the North. Bangkok vicinity and the Central Region had relatively low participation.

Households participating in social services in 2007 (%)					
Top five provinces			Bottom five provinces		
1	Nakhon Sawan	100.0	72	Chanthaburi	90.0
2	Kamphaeng Phet	100.0	73	Ratchaburi	89.4
3	Yasothon	100.0	74	Rayong	88.8
4	Maha Sarakham	100.0	75	Bangkok Metropolis	85.6
5	Roi Et / Nakhon Phanom	100.0	76	Samut Sakhon	85.6

Notes: 1). There are no data for Bangkok. Samut Sakhon, which has the lowest value, is used as proxy for Bangkok.  
2). Data cover only non-municipal areas.



Annex

# Data Tables

Table AI.0: Basic Data

Location	Population, 2007			Households, 2007		Gross Provincial Product (GPP), 2007		Land area, 2006				Population density, 2007 (persons per sq.km.)
	Total	Male	Female	Total	Average household size	Total	Per capita	Total	Forest	Farm hold	Unclassified	
	(number)	(number)	(number)	(number)	(persons)	(mil. baht/year)	(baht/year)	(sq.km)	(sq.km)	(sq.km)	(sq.km)	
	1	2	3	4	5	6	7	8	9	10	11	
<b>Kingdom</b>	<b>63,038,247</b>	<b>31,095,942</b>	<b>31,942,305</b>	<b>18,178,247</b>	<b>3.3</b>	<b>8,493,311</b>	<b>128,606</b>	<b>513,115</b>	<b>158,652.59</b>	<b>208,465</b>	<b>145,997</b>	<b>123</b>
<b>Bangkok Metropolis</b>	<b>5,716,248</b>	<b>2,727,574</b>	<b>2,988,674</b>	<b>1,959,205</b>	<b>3.2</b>	<b>2,216,997</b>	<b>324,039</b>	<b>1,565</b>	<b>3.09</b>	<b>192</b>	<b>1,370</b>	<b>3,652</b>
Samut Prakan	1,126,940	547,341	579,599	374,579	2.6	614,125	483,509	1,004	5.81	306	692	1,122
Nonthaburi	1,024,191	484,838	539,353	348,635	3.0	111,116	116,681	622	0.00	264	359	1,646
Pathum Thani	896,843	428,791	468,052	217,874	3.3	192,948	239,448	1,526	0.00	739	787	588
Phra Nakhon Si Ayutthaya	760,712	367,673	393,039	187,270	3.4	337,826	443,879	2,557	1.47	1,711	844	298
Ang Thong	284,406	136,962	147,444	80,465	3.2	20,837	76,229	968	0.00	750	219	294
Lop Buri	749,821	375,677	374,144	216,197	3.3	70,235	91,065	6,200	691.22	3,541	1,968	121
Sing Buri	215,653	103,166	112,487	71,162	3.4	22,140	94,086	822	0.00	673	150	262
Chai Nat	337,147	162,947	174,200	111,076	3.1	26,346	72,243	2,470	56.75	1,895	518	137
Saraburi	615,756	305,056	310,700	199,853	3.1	134,029	222,427	3,576	701.98	1,498	1,377	172
Chon Buri	1,233,446	607,029	626,417	305,856	2.9	453,886	388,174	4,363	450.93	2,143	1,769	283
Rayong	583,470	288,098	295,372	148,186	3.0	604,896	1,035,536	3,552	292.27	2,063	1,197	164
Chanthaburi	504,003	248,842	255,161	154,195	3.3	38,215	72,561	6,338	2,061.34	2,616	1,661	80
Trat	220,543	110,876	109,667	74,803	3.1	20,309	84,745	2,819	920.69	852	1,046	78
Chachoengsao	658,966	323,500	335,466	183,353	3.4	210,530	301,798	5,351	759.18	2,890	1,702	123
Prachin Buri	454,988	225,786	229,202	114,907	3.4	70,292	158,605	4,762	1,439.42	1,869	1,454	96
Nakhon Nayok	248,496	122,765	125,731	67,679	3.2	16,946	65,714	2,122	641.09	1,004	477	117
Sa Kaeo	539,137	271,670	267,467	218,271	3.3	29,524	55,508	7,195	1,318.70	3,359	2,517	75
Ratchaburi	831,438	407,338	424,100	236,124	3.4	102,901	124,657	5,196	1,544.77	1,773	1,879	160
Kanchanaburi	835,282	421,707	413,575	230,807	3.3	69,264	89,486	19,483	11,450.81	3,283	4,449	43
Suphan Buri	842,584	409,096	433,488	230,628	3.3	57,997	65,579	5,358	599.92	3,310	1,448	157
Nakhon Pathom	830,970	401,245	429,725	273,774	3.5	126,140	133,032	2,168	0.00	1,147	1,022	383
Samut Sakhon	469,934	228,254	241,680	156,073	2.9	315,473	564,488	872	33.16	249	590	539
Samut Songkhram	194,212	93,526	100,686	48,509	3.1	15,398	73,330	417	10.72	184	222	466
Phetchaburi	456,061	220,847	235,214	120,619	3.4	51,028	112,263	6,225	3,272.19	1,052	1,901	73
Prachuap Khiri Khan	494,588	248,290	246,298	128,665	3.3	53,785	113,380	6,368	2,183.18	1,967	2,217	78
<b>Central Region</b>	<b>15,409,587</b>	<b>7,541,320</b>	<b>7,868,267</b>	<b>4,499,559</b>	<b>3.2</b>	<b>3,766,184</b>	<b>241,165</b>	<b>102,336</b>	<b>28,435.60</b>	<b>41,329</b>	<b>32,571</b>	<b>151</b>
Chiang Mai	1,664,399	817,524	846,875	501,008	2.8	118,020	74,524	20,107	15,243.98	2,154	2,709	83
Lamphun	405,157	197,719	207,438	113,592	3.0	65,182	150,659	4,506	2,575.53	890	1,040	90
Lampang	770,613	380,361	390,252	234,063	3.0	45,615	55,976	12,534	7,926.24	1,624	2,983	61
Uttaradit	465,277	229,639	235,638	134,010	3.3	26,900	55,326	7,839	4,303.64	2,008	1,527	59
Phrae	465,876	227,772	238,104	140,384	3.2	21,884	42,558	6,539	4,095.07	975	1,469	71
Nan	477,381	240,800	236,581	146,988	3.5	20,746	42,803	11,472	8,095.10	1,122	2,255	42
Phayao	486,579	239,393	247,186	157,947	2.9	23,298	43,996	6,335	3,012.32	1,661	1,662	77
Chiang Rai	1,225,013	605,963	619,050	387,378	3.0	54,306	45,467	11,678	4,918.56	3,208	3,552	105
Mae Hong Son	254,804	131,667	123,137	71,417	3.3	9,431	41,390	12,681	10,642.99	403	1,635	20
Nakhon Sawan	1,073,683	526,476	547,207	297,196	3.2	73,533	64,368	9,598	817.85	6,247	2,532	112
Uthai Thani	326,975	161,146	165,829	90,616	3.1	19,237	60,630	6,730	3,114.75	2,142	1,473	49
Kamphaeng Phet	725,994	361,523	364,471	240,852	3.3	72,644	102,302	8,607	1,899.85	3,949	2,759	84
Tak	530,928	270,657	260,271	141,900	3.2	35,075	67,457	16,407	12,180.80	1,587	2,639	32
Sukhothai	605,301	295,317	309,984	180,329	3.3	29,696	47,643	6,596	2,091.30	3,003	1,501	92
Phitsanulok	841,683	414,311	427,372	241,151	3.1	54,769	65,347	10,816	3,820.79	3,848	3,147	78
Phichit	554,740	271,896	282,844	153,650	3.2	30,620	51,496	4,531	13.18	3,168	1,349	122
Phetchabun	997,531	496,858	500,673	293,391	3.5	58,443	57,118	12,668	3,616.16	5,939	3,114	79
<b>Northern Region</b>	<b>11,871,934</b>	<b>5,869,022</b>	<b>6,002,912</b>	<b>3,525,871</b>	<b>3.1</b>	<b>759,400</b>	<b>63,088</b>	<b>169,644</b>	<b>88,368.11</b>	<b>43,930</b>	<b>37,347</b>	<b>70</b>
Nakhon Ratchasima	2,552,894	1,264,118	1,288,776	713,016	3.4	150,763	54,362	20,494	2,915.04	12,350	5,229	125
Buri Ram	1,536,070	766,889	769,181	417,384	3.5	51,007	31,444	10,322	811.01	6,294	3,217	149
Surin	1,372,672	686,246	686,426	401,043	3.4	45,185	31,759	8,124	792.11	5,676	1,656	169
Si Sa Ket	1,443,011	721,032	721,979	386,392	3.8	44,191	29,174	8,840	998.22	5,507	2,335	163
Ubon Ratchathani	1,785,709	895,369	890,340	441,854	3.8	67,389	36,681	15,745	2,405.29	7,615	5,724	113
Yasothon	539,542	270,840	268,702	143,157	3.4	19,508	32,038	4,162	443.65	2,569	1,149	130
Chaiyaphum	1,119,597	557,725	561,872	309,642	3.5	42,079	35,578	12,778	3,578.40	5,453	3,747	88
Amnat Charoen	368,915	184,913	184,002	153,029	3.7	12,154	30,970	3,161	528.82	2,147	485	117
Nong Bua Lam Phu	497,603	250,386	247,217	197,134	3.6	15,373	29,224	3,859	326.08	2,377	1,156	129
Khon Kaen	1,752,414	869,386	883,028	441,532	3.4	127,089	68,103	10,886	966.98	6,636	3,283	161
Udon Thani	1,530,686	765,723	764,963	369,958	3.9	71,152	44,476	11,730	985.51	5,903	4,842	130
Loei	615,538	311,517	304,021	169,092	3.8	31,807	48,721	11,425	4,071.56	3,673	3,680	54
Nong Khai	902,618	453,868	448,750	269,310	3.5	32,505	33,941	7,332	510.94	4,220	2,602	123
Maha Sarakham	936,005	463,945	472,060	223,930	3.7	33,983	33,426	5,292	132.32	4,346	814	177
Roi Et	1,308,589	653,594	654,995	373,602	3.4	47,933	35,654	8,299	504.14	5,111	2,684	158
Kalasin	977,508	487,574	489,934	256,898	3.4	38,368	38,560	6,947	673.51	4,184	2,090	141
Sakon Nakhon	1,113,064	556,088	556,976	292,454	3.5	38,293	33,784	9,606	1,476.88	4,475	3,654	116
Nakhon Phanom	697,105	347,294	349,811	151,157	3.3	22,371	30,305	5,513	1,031.71	2,371	2,110	126
Mukdahan	336,107	168,517	167,590	103,873	3.6	12,970	38,404	4,340	1,397.71	1,471	1,472	77
<b>Northeastern Region</b>	<b>21,385,647</b>	<b>10,675,024</b>	<b>10,710,623</b>	<b>5,814,456</b>	<b>3.6</b>	<b>904,119</b>	<b>40,144</b>	<b>168,854</b>	<b>24,549.88</b>	<b>92,377</b>	<b>51,927</b>	<b>127</b>
Nakhon Si Thammarat	1,506,997	749,036	757,961	432,298	3.3	122,764	73,451	9,943	1,857.81	4,841	3,244	152
Krabi	410,634	206,048	204,586	114,996	3.5	43,958	115,500	4,709	861.16	2,047	1,800	87
Phang-nga	246,887	123,837	123,050	67,155	3.4	29,559	113,949	4,171	1,688.87	1,338	1,144	59
Phuket	315,948	150,473	165,025	88,854	3.0	61,905	214,099	543	94.33	216	233	581
Surat Thani	970,424	480,958	489,466	276,556	3.2	120,749	123,958	12,891	3,681.88	4,355	4,855	75
Ranong	180,787	94,437	86,350	53,860	3.6	16,594	90,734	3,298	1,651.72	748	898	55
Chumphon	481,298	240,186	241,112	143,987	3.3	45,390	91,809	6,009	1,181.58	3,153	1,674	80
Songkhla	1,324,915	647,820	677,095	371,588	3.4	162,072	114,981	7,394	772.84			

Table AI.1: Health

Location	Population mid-year 2007	Under-weight births 2007	Crude death 2007	Under-five mortality 2007	Infant mortality 2007	Maternal mortality 2007	Sexually transmitted diseases 2007	AIDS patients 1984-2007	New AIDS patients 2007	AIDS incidence 2007	Population with physical illness 2007			Mental illness 2007
		(% of total)	per 1,000 pop	per 1,000 live births	per 1,000 live births	per 100,000 live births	per 100,000 pop	Total	Total	per 100,000 pop	Male	Female	Total	per 1,000 pop
	(number)	livebirths	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(%)	(%)	(%)	(number)
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>Kingdom</b>	<b>62,933,515</b>	<b>11.0</b>	<b>6.2</b>	<b>10.01</b>	<b>7.2</b>	<b>12.2</b>	<b>15.9</b>	<b>340,171</b>	<b>14,966</b>	<b>24</b>	<b>15.3</b>	<b>19.5</b>	<b>17.4</b>	<b>21.3</b>
<b>Bangkok Metropolis</b>	<b>5,706,103</b>	<b>10.2</b>	<b>6.7</b>	<b>9.31</b>	<b>7.3</b>	<b>10.9</b>	<b>58.8</b>	<b>39,424</b>	<b>2,979</b>	<b>52</b>	<b>15.0</b>	<b>17.7</b>	<b>16.4</b>	<b>25.2</b>
Samut Prakan	1,117,284	11.0	5.6	9.91	8.2	12.8	16.2	6,207	394	35	6.8	10.5	8.6	14.3
Nonthaburi	1,011,624	10.2	5.6	11.55	7.7	8.6	n.a.	5,826	297	29	15.3	17.8	16.6	124.1
Pathum Thani	879,091	10.5	5.8	7.74	5.3	7.7	0.2	5,658	305	35	9.5	16.7	13.3	5.3
Phra Nakhon Si Ayutthaya	757,654	10.9	7.8	6.67	4.5	0.0	14.5	4,515	296	39	15.4	18.3	16.9	38.9
Ang Thong	284,175	9.9	8.3	7.5	4.6	0.0	0.0	1,175	91	32	13.2	29.5	21.8	57.9
Lop Buri	751,298	10.9	7.2	9.8	6.8	0.0	n.a.	3,097	225	30	21.5	30.5	25.9	7.0
Sing Buri	216,311	10.5	9.4	8.18	5.2	0.0	3.7	1,184	71	33	27.4	39.1	33.5	17.6
Chai Nat	338,077	10.6	8.1	8.99	8.7	0.0	n.a.	385	72	21	16.3	26.6	21.6	35.4
Saraburi	612,806	10.8	7.6	8.64	5.8	0.0	n.a.	2,708	75	12	17.5	21.9	19.8	13.7
Chon Buri	1,221,369	10.1	7.2	8.91	6.3	7.2	n.a.	6,042	148	12	9.3	14.7	12.0	6.3
Rayong	578,628	10.4	6.6	10.8	7.4	0.0	33.0	8,201	25	4	2.9	5.1	4.0	20.0
Chanthaburi	503,197	11.6	7.2	12.58	8.2	31.5	n.a.	5,471	254	50	17.1	20.3	18.7	20.8
Trat	220,246	10.2	5.4	9.51	6.1	38.1	2.3	3,461	164	74	15.5	15.8	15.7	8.6
Chachoengsao	656,586	10.2	6.9	10.37	6.7	0.0	1.7	3,187	120	18	14.2	18.1	16.1	3.0
Prachin Buri	454,404	9.5	6.4	10.16	6.5	0.0	16.1	3,185	159	35	19.1	30.5	25.2	10.3
Nakhon Nayok	249,250	9.7	7.8	11.41	7.8	30.0	1.6	1,486	36	14	24.1	31.3	27.7	10.4
Sa Kaeo	538,741	9.3	4.9	9.49	6.1	0.0	0.7	1,872	90	17	14.6	18.0	16.4	18.7
Ratchaburi	830,184	10.2	7.2	11.19	7.1	0.0	29.8	5,216	174	21	14.7	20.3	17.7	28.5
Kanchanaburi	834,865	12.2	5.2	9.67	7.0	19.9	7.9	4,201	79	9	20.9	25.2	23.1	11.7
Suphan Buri	843,245	10.4	7.5	10.47	7.3	0.0	8.1	4,619	286	34	26.0	35.7	30.9	19.8
Nakhon Pathom	826,438	10.2	6.5	9.88	15.7	19.8	14.2	5,208	63	8	7.5	11.5	9.6	6.5
Samut Sakhon	466,222	10.3	7.1	8.78	6.4	9.5	8.6	2,944	121	26	10.0	7.2	8.6	9.0
Samut Songkhram	194,602	9.5	6.7	9.6	6.9	0.0	7.2	1,460	28	14	15.8	20.0	18.1	38.0
Phetchaburi	456,371	10.4	6.9	6.93	4.0	0.0	16.0	4,333	152	33	10.5	15.4	13.0	11.9
Prachuap Khiri Khan	494,502	11.3	5.8	12.17	8.4	0.0	6.9	3,680	226	46	14.6	21.3	17.7	24.8
<b>Central Region</b>	<b>15,337,170</b>	<b>10.5</b>	<b>6.7</b>	<b>9.62</b>	<b>6.7</b>	<b>6.6</b>	<b>8.1</b>	<b>134,745</b>	<b>6,930</b>	<b>45</b>	<b>13.7</b>	<b>18.8</b>	<b>16.3</b>	<b>23.3</b>
Chiang Mai	1,661,349	14.9	8.1	11.28	8.1	21.6	42.1	22,154	604	36	11.2	14.9	13.0	51.5
Lamphun	405,361	13.7	8.9	10.44	8.1	0.0	8.6	5,286	112	28	22.7	33.3	28.1	11.0
Lampang	772,202	12.7	8.2	10.33	8.3	0.0	23.7	10,185	143	19	23.9	26.7	25.4	18.6
Uttaradit	466,380	12.9	7.6	9.31	6.2	0.0	3.2	1,607	93	20	30.3	41.3	35.9	5.9
Phrae	467,125	11.2	8.5	6.95	4.9	0.0	0.0	3,293	121	26	23.8	29.9	26.8	73.6
Nan	477,522	12.1	6.3	9.38	6.8	0.0	n.a.	3,255	80	17	17.5	19.3	18.4	7.1
Phayao	486,399	10.5	8.1	9.87	7.3	0.0	4.3	12,299	385	79	9.9	12.5	11.2	44.8
Chiang Rai	1,225,364	13.4	7.1	8.04	5.5	26.8	17.3	23,354	761	62	14.7	21.4	18.0	20.5
Mae Hong Son	254,990	22.1	4.6	15.31	11.6	113.4	n.a.	1,685	49	19	20.6	23.5	22.1	8.1
Nakhon Sawan	1,074,849	10.1	6.9	12.48	9.8	9.3	58.7	3,629	304	28	17.1	16.9	17.0	20.1
Uthai Thani	326,982	10.7	6.8	11.82	9.2	0.0	7.7	1,405	135	41	14.9	23.8	19.7	16.3
Kamphaeng Phet	727,158	11.4	5.8	9.27	6.0	0.0	n.a.	4,219	284	39	29.0	33.4	31.3	11.4
Tak	529,303	24.1	5.0	7.72	5.0	0.0	n.a.	1,694	29	5	29.4	37.3	33.6	5.0
Sukhothai	607,061	10.6	6.9	10.37	7.4	37.7	6.9	2,751	127	21	26.6	27.6	27.1	19.8
Phitsanulok	843,096	11.7	7.4	12.59	10.6	11.7	22.9	3,320	144	17	17.2	24.2	20.9	14.0
Phichit	556,287	10.2	6.9	7.78	5.2	0.0	1.1	1,877	145	26	13.7	20.5	17.1	4.0
Phetchabun	999,924	11.3	5.8	8.68	5.4	0.0	1.9	4,362	314	31	14.6	24.4	19.6	24.6
<b>Northern Region</b>	<b>11,881,352</b>	<b>13.3</b>	<b>7.1</b>	<b>10.16</b>	<b>7.6</b>	<b>13.1</b>	<b>17.5</b>	<b>106,375</b>	<b>3,830</b>	<b>32</b>	<b>18.8</b>	<b>24.2</b>	<b>21.5</b>	<b>23.8</b>
Nakhon Ratchasima	2,554,241	10.2	5.8	10.32	7.4	14.5	8.0	5,183	52	2	18.5	19.9	19.2	30.5
Buri Ram	1,536,396	10.3	5.0	6.92	4.3	24.3	0.8	4,196	78	5	6.0	12.8	9.5	19.0
Surin	1,373,965	11.9	5.4	9.71	5.6	7.1	3.2	3,802	31	2	16.9	20.8	18.9	34.1
Si Sa Ket	1,444,748	11.6	5.2	9.09	6.4	7.0	0.1	4,159	305	21	12.0	15.4	13.8	21.0
Ubon Ratchathani	1,784,372	12.9	5.7	14.21	10.9	19.2	12.0	5,605	224	13	8.1	9.2	8.6	30.3
Yasothon	540,216	12.2	5.9	7.08	4.9	0.0	n.a.	1,134	68	13	10.2	14.5	12.3	18.0
Chaiyaphum	1,119,372	10.8	5.8	8.13	5.9	9.3	0.7	3,207	165	15	13.2	15.8	14.5	14.8
Amnat Charoen	368,925	11.8	5.0	5.59	4.0	26.6	n.a.	1,795	112	30	9.6	13.0	11.2	17.9
Nong Bua Lam Phu	497,148	9.2	4.8	8.93	6.0	0.0	1.8	1,745	77	15	9.3	16.4	12.7	9.6
Khon Kaen	1,751,458	10.3	6.5	17.1	13.0	5.2	3.1	6,186	123	7	23.5	31.8	27.6	18.3
Udon Thani	1,529,124	10.4	5.5	8.53	5.4	0.0	31.9	6,183	192	13	13.1	15.4	14.3	9.2
Loei	614,421	11.9	5.4	6.13	4.6	0.0	2.8	2,504	191	31	12.7	14.9	13.7	29.8
Nong Khai	901,100	10.7	5.2	8.17	5.2	0.0	8.2	1,724	50	6	13.7	18.2	16.0	10.6
Maha Sarakham	936,846	9.7	5.7	9.34	7.1	12.5	n.a.	2,754	123	13	17.4	17.8	17.6	10.6
Roi Et	1,309,318	10.3	5.8	11.59	8.5	18.0	0.8	4,356	112	9	17.9	27.0	22.4	3.6
Kalasin	976,536	10.9	5.8	10.86	8.8	10.6	n.a.	2,650	134	14	10.9	14.4	12.6	15.2
Sakon Nakhon	1,111,056	14.0	5.7	8.89	6.3	30.1	1.4	1,712	10	1	14.9	19.6	17.2	9.8
Nakhon Phanom	696,229	12.2	5.6	8.52	5.5	0.0	7.5	1,898	37	5	16.4	31.2	23.5	25.9
Mukdahan	335,778	13.5	5.2	3.36	3.4	25.8	0.6	1,205	78	23	22.9	26.2	24.5	6.9
<b>Northeastern Region</b>	<b>21,381,249</b>	<b>11.2</b>	<b>5.6</b>	<b>10.04</b>	<b>7.2</b>	<b>11.6</b>	<b>5.6</b>	<b>61,998</b>	<b>2,162</b>	<b>10</b>	<b>14.3</b>	<b>18.5</b>	<b>16.4</b>	<b>19.2</b>
Nakhon Si Thammarat	1,508,729	9.0	5.4	10.06	7.7	10.6	15.0	4,644	288	19	21.6	29.3	25.6	11.5
Krabi	406,999	11.0	4.7	9.79	6.7	40.8	1.7	1,628	39	10	14.6	17.2	15.9	11.5
Phang-nga	246,141	11.3	5.6	8.16	5.7	30.2	3.3	1,063	45	18	7.2	10.8	9.0	8.6
Phuket	308,118	9.2	6.4	7.45	5.8	13.8	257.0	3,415	288	93	7.7	10.5	9.2	8.9
Surat Thani	965,561	10.5	5.7	11.72	8.6	36.6	5.3	4,131	158	16	16.9	19.4	18.2	34.8
Ranong	180,319	11.3	4.2	8.11	5.7	0.0	38.8	3,175	169	94	12.3	10.4	11.2	13.7
Chumphon	480,131	9.7	5.8	8.48	6.8	0.0	0.4	1,707	48	10	26.8	32.5	29.5	11.0
Songkhla	1,321,209	10.0	6.2	11.51	6.7	23.6	55.7	4,817	173	13	15.8	18.6	17.2	32.2

Table A1.1: Health (continued)

Location	Alcoholic consumption 2007			Cigarette smoking 2007			Unhealthy behavior 2007 (smoking and/or drinking)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
	15	16	17	18	19	20	21	22	23
<b>Kingdom</b>	<b>47.1</b>	<b>8.2</b>	<b>27.1</b>	<b>38.5</b>	<b>1.8</b>	<b>19.7</b>	<b>58.5</b>	<b>9.2</b>	<b>33.2</b>
<b>Bangkok Metropolis</b>	<b>36.4</b>	<b>4.7</b>	<b>19.4</b>	<b>25.5</b>	<b>1.2</b>	<b>12.4</b>	<b>44.3</b>	<b>5.2</b>	<b>23.3</b>
Samut Prakan	51.3	8.3	28.6	32.9	0.9	16.0	58.8	8.7	32.4
Nonthaburi	44.8	4.8	23.2	27.4	0.8	13.0	49.7	5.0	25.5
Pathum Thani	38.5	3.6	20.2	28.4	1.1	14.1	49.7	4.4	26.0
Phra Nakhon Si Ayutthaya	28.8	1.9	14.4	25.4	0.9	12.3	38.0	2.5	19.0
Ang Thong	40.3	3.1	21.4	34.9	2.8	18.6	53.0	5.2	28.7
Lop Buri	49.2	8.8	28.8	38.0	5.3	21.5	61.8	12.3	36.9
Sing Buri	45.1	3.4	24.7	37.7	3.0	20.8	58.5	5.9	32.7
Chai Nat	48.1	5.5	25.9	38.4	2.6	19.8	59.0	7.3	32.1
Saraburi	47.5	8.7	27.5	34.5	2.0	17.7	56.9	9.7	32.5
Chon Buri	46.2	9.3	26.4	29.4	2.3	14.9	53.6	10.4	30.4
Rayong	53.5	5.6	28.4	37.2	1.5	18.5	61.2	6.2	32.5
Chanthaburi	53.0	11.9	32.9	41.0	4.8	23.3	62.9	14.3	39.2
Trat	47.4	10.7	30.4	40.1	5.3	24.0	58.9	13.5	37.9
Chachoengsao	36.1	3.2	19.5	32.4	0.6	16.3	48.7	3.7	25.9
Prachin Buri	53.1	16.8	35.1	35.3	2.4	19.0	61.9	17.7	40.0
Nakhon Nayok	42.0	3.2	23.8	40.3	1.4	22.0	56.9	3.7	31.9
Sa Kaeo	49.1	19.7	34.8	41.0	2.1	22.1	62.5	20.3	42.0
Ratchaburi	42.9	5.4	22.9	42.3	2.4	21.0	56.4	6.8	30.0
Kanchanaburi	42.2	2.1	23.0	40.1	3.0	22.4	58.6	4.6	32.7
Suphan Buri	37.4	2.2	18.8	30.3	0.6	14.5	47.2	2.6	23.6
Nakhon Pathom	40.9	2.3	21.2	32.4	1.2	16.5	50.2	3.0	26.1
Samut Sakhon	43.2	1.7	23.1	38.5	1.2	20.4	55.2	2.6	29.7
Samut Songkhram	34.6	1.9	17.1	29.5	1.2	14.4	45.7	2.7	22.7
Phetchaburi	27.7	1.0	13.4	29.9	0.9	14.3	42.0	1.6	20.3
Prachuap Khiri Khan	40.7	4.5	22.4	39.3	3.2	21.0	55.9	6.9	31.1
<b>Central Region</b>	<b>43.8</b>	<b>6.1</b>	<b>24.4</b>	<b>34.4</b>	<b>1.9</b>	<b>17.6</b>	<b>54.4</b>	<b>7.2</b>	<b>30.1</b>
Chiang Mai	56.9	13.8	34.5	37.6	6.0	21.2	64.3	18.6	40.6
Lamphun	57.6	11.8	34.5	36.7	9.0	22.8	65.7	19.0	42.2
Lampang	55.1	12.4	32.9	33.2	4.3	18.2	61.4	15.2	37.4
Uttaradit	50.6	12.3	30.7	33.9	2.0	17.3	59.0	13.2	35.2
Phrae	67.8	26.6	46.9	33.4	3.8	18.4	72.9	28.5	50.4
Nan	59.0	20.6	40.8	21.1	3.8	12.9	61.0	23.0	43.0
Phayao	69.7	31.2	50.3	36.9	5.7	21.2	74.5	33.7	54.0
Chiang Rai	60.1	30.4	44.9	33.4	6.4	19.6	66.3	33.6	49.6
Mae Hong Son	39.5	3.1	23.5	34.0	5.5	21.5	49.3	7.8	31.1
Nakhon Sawan	44.1	6.1	23.9	34.5	2.5	17.5	54.4	7.4	29.4
Uthai Thani	45.6	4.0	24.1	41.7	2.5	21.5	60.1	5.3	31.8
Kamphaeng Phet	54.5	20.3	36.5	43.3	4.8	23.1	63.7	23.0	42.3
Tak	57.3	8.4	32.2	47.6	12.2	29.4	65.5	18.8	41.5
Sukhothai	54.5	12.2	30.8	39.6	2.0	18.5	64.0	13.2	35.5
Phitsanulok	61.5	13.0	38.3	44.3	1.4	23.8	69.3	13.8	42.8
Phichit	45.7	8.2	26.1	39.1	2.9	20.2	58.6	9.6	33.1
Phetchabun	59.1	13.9	36.9	41.8	3.7	23.1	67.9	15.3	42.0
<b>Northern Region</b>	<b>56.1</b>	<b>15.6</b>	<b>35.4</b>	<b>37.3</b>	<b>4.6</b>	<b>20.6</b>	<b>64.0</b>	<b>18.6</b>	<b>40.8</b>
Nakhon Ratchasima	51.9	4.9	26.6	43.9	1.0	20.8	62.7	5.3	31.8
Buri Ram	57.2	14.3	34.1	43.2	0.3	20.1	67.6	14.3	38.9
Surin	47.8	17.0	32.1	39.5	1.2	20.1	62.2	17.5	39.5
Si Sa Ket	52.7	8.7	30.9	41.0	0.7	21.0	64.1	9.2	36.9
Ubon Ratchathani	52.8	6.3	28.5	33.3	0.6	16.2	58.4	6.7	31.4
Yasothon	58.7	7.6	33.3	43.2	0.8	22.1	67.6	8.3	38.1
Chaiyaphum	51.3	7.5	30.2	46.9	0.5	24.5	61.5	7.6	35.5
Amnat Charoen	63.5	8.2	36.1	45.8	0.6	23.4	71.8	8.4	40.4
Nong Bua Lam Phu	61.9	15.4	39.5	47.1	0.1	24.4	71.3	15.5	44.4
Khon Kaen	62.7	15.9	39.3	48.5	0.6	24.5	70.4	16.1	43.2
Udon Thani	52.3	13.4	34.6	46.0	1.4	25.7	64.8	13.8	41.6
Loei	63.0	9.8	36.2	50.8	0.0	25.2	71.1	9.8	40.2
Nong Khai	54.2	6.7	31.0	42.7	0.3	22.0	64.4	6.9	36.3
Maha Sarakham	52.5	7.0	29.4	41.7	0.3	20.8	63.9	7.0	35.1
Roi Et	54.8	8.1	30.8	43.9	0.1	21.3	65.1	8.1	35.8
Kalasin	52.1	6.2	28.3	41.8	0.5	20.4	63.2	6.3	33.7
Sakon Nakhon	52.0	5.0	28.8	44.7	0.5	22.9	62.0	5.1	33.9
Nakhon Phanom	53.8	6.4	30.3	44.6	0.3	22.7	62.4	6.6	34.8
Mukdahan	63.3	15.7	38.9	51.3	1.0	25.6	71.8	16.2	43.4
<b>Northeastern Region</b>	<b>54.7</b>	<b>9.6</b>	<b>31.8</b>	<b>43.5</b>	<b>0.6</b>	<b>21.8</b>	<b>64.8</b>	<b>9.8</b>	<b>37.0</b>
Nakhon Si Thammarat	36.6	1.0	17.4	47.1	1.3	22.4	57.2	1.8	27.3
Krabi	34.0	2.9	17.9	45.5	1.1	22.5	54.5	3.4	28.1
Phang-nga	30.2	1.7	16.1	39.1	1.2	20.3	49.5	2.6	26.2
Phuket	41.3	4.1	21.8	36.5	2.4	18.6	53.1	5.1	27.9
Surat Thani	41.1	4.4	22.6	51.0	1.1	25.8	60.2	4.8	32.2
Ranong	31.9	1.2	16.3	46.7	1.0	23.4	56.1	2.1	28.6
Chumphon	45.6	1.6	24.1	48.9	1.7	25.9	60.5	2.5	32.2
Songkhla	32.4	0.9	16.6	43.2	0.8	21.9	53.3	1.7	27.3
Satun	12.8	0.6	6.7	50.7	0.9	25.6	55.4	1.3	28.2
Trang	45.0	1.2	22.8	49.2	0.7	24.7	62.2	1.6	31.5
Phatthalung	41.6	0.2	20.3	46.0	0.7	22.7	58.3	0.8	28.7
Pattani	6.2	0.1	3.4	51.7	1.9	29.1	53.3	1.9	30.1
Yala	10.0	1.2	5.7	39.8	1.7	21.1	43.4	2.9	23.6
Narathiwat	3.9	0.3	2.0	36.2	1.1	17.7	37.3	1.3	18.4
<b>Southern Region</b>	<b>30.6</b>	<b>1.5</b>	<b>15.8</b>	<b>45.6</b>	<b>1.2</b>	<b>23.0</b>	<b>54.3</b>	<b>2.3</b>	<b>27.8</b>

See Annex II for data sources

Table AI.1: Health (continued)

Location	Population that exercise 2007			Population with disability and/or impairment 2007			Population per health personnel/infrastructure 2007				
	Male	Female	Total	Male	Female	Total	Physician	Dentist	Pharmacist	Nurse	Hospital bed
	%	%	%	(%)	(%)	(%)	(number)	(number)	(number)	(number)	(number)
	24	25	26	27	28	29	30	31	32	33	34
<b>Kingdom</b>	<b>32.7</b>	<b>26.8</b>	<b>29.7</b>	<b>2.7</b>	<b>3.0</b>	<b>2.9</b>	<b>2,778</b>	<b>13,525</b>	<b>7,348</b>	<b>531</b>	<b>450</b>
<b>Bangkok Metropolis</b>	<b>37.6</b>	<b>29.8</b>	<b>33.4</b>	<b>0.4</b>	<b>0.5</b>	<b>0.5</b>	<b>850</b>	<b>4,869</b>	<b>3,527</b>	<b>228</b>	<b>198</b>
Samut Prakan	31.1	18.5	24.7	0.5	0.5	0.5	2,858	19,601	7,705	731	427
Nonthaburi	28.6	21.9	25.1	0.6	1.0	0.8	2,130	10,016	6,835	424	247
Sathum Thani	27.1	20.1	23.4	0.5	0.7	0.6	2,332	15,983	8,970	581	338
Phra Nakhon Si Ayutthaya	35.3	26.5	30.6	2.0	2.6	2.3	4,052	16,120	8,709	562	518
Ang Thong	30.1	23.7	26.7	3.5	4.1	3.8	3,552	14,209	8,358	427	426
Lop Buri	25.3	23.2	24.3	6.1	6.3	6.2	3,954	17,472	11,383	557	424
Sing Buri	31.8	27.4	29.5	3.5	4.7	4.1	2,963	12,017	6,180	266	312
Chai Nat	23.7	15.4	19.5	4.6	7.0	5.8	5,122	18,782	9,391	501	596
Saraburi	33.2	31.0	32.1	3.7	4.7	4.2	2,375	12,767	7,126	373	341
Chon Buri	30.7	13.6	21.9	0.5	0.6	0.6	1,435	7,730	4,925	278	285
Rayong	24.6	9.3	17.2	1.0	1.1	1.0	3,197	19,288	7,926	515	499
Chanthaburi	37.8	28.3	32.9	3.2	3.2	3.2	2,079	15,725	6,621	384	356
Trat	30.5	20.7	25.5	2.1	2.1	2.1	2,860	15,732	7,342	346	374
Chachoengsao	29.1	17.5	23.2	1.2	1.5	1.3	4,937	18,760	11,129	667	502
Prachin Buri	32.9	30.2	31.5	3.7	4.8	4.3	4,247	16,830	7,972	556	399
Nakhon Nayok	34.6	26.1	30.4	2.0	1.7	1.8	762	8,595	6,231	295	269
Sa Kaeo	30.7	24.2	27.2	5.2	6.2	5.7	5,554	21,550	14,177	965	715
Ratchaburi	32.1	23.7	27.6	4.7	5.3	5.0	2,722	17,663	4,883	387	322
Kanchanaburi	25.9	15.5	20.5	3.0	3.3	3.1	4,326	17,763	10,985	691	507
Suphan Buri	21.3	17.2	19.2	2.6	2.7	2.6	4,462	12,046	8,971	608	475
Nakhon Pathom	31.9	18.8	25.1	1.7	2.0	1.8	2,801	8,609	8,183	579	453
Samut Sakhon	23.0	13.9	18.4	0.3	0.3	0.3	2,343	15,541	6,959	520	309
Samut Songkhram	21.5	12.9	16.8	3.9	4.2	4.0	5,260	12,973	6,710	374	407
Phetchaburi	17.4	14.4	15.8	2.9	3.4	3.2	3,651	21,732	7,606	486	490
Prachuap Khiri Khan	21.7	14.7	18.4	3.3	3.8	3.5	3,833	19,780	7,976	614	445
<b>Central Region</b>	<b>28.9</b>	<b>20.0</b>	<b>24.3</b>	<b>2.0</b>	<b>2.3</b>	<b>2.2</b>	<b>2,747</b>	<b>13,842</b>	<b>7,611</b>	<b>480</b>	<b>386</b>
Chiang Mai	32.4	27.9	30.2	3.3	3.3	3.3	1,409	6,922	5,729	386	278
Lamphun	23.2	22.4	22.8	1.9	2.0	2.0	4,267	16,214	6,645	574	481
Lampang	26.7	31.1	28.9	4.4	4.2	4.3	2,925	18,386	7,646	462	463
Uttaradit	27.3	28.5	28.0	4.8	5.7	5.3	3,173	15,546	7,773	518	542
Phrae	32.6	34.8	33.7	5.9	5.7	5.8	4,286	19,464	7,917	528	570
Nan	34.8	23.1	28.9	3.5	4.1	3.8	4,505	14,923	7,580	505	460
Phayao	30.8	30.8	30.8	3.8	3.0	3.4	4,122	19,456	8,844	461	535
Chiang Rai	34.5	32.2	33.4	5.6	4.8	5.2	5,127	19,450	10,384	728	624
Mae Hong Son	20.2	12.0	15.9	2.3	1.7	2.0	4,180	15,937	9,107	550	593
Nakhon Sawan	25.8	14.3	19.9	6.2	7.6	7.0	3,719	18,857	8,143	635	531
Uthai Thani	28.7	18.8	23.3	3.8	3.7	3.8	4,605	16,349	8,384	539	495
Kamphaeng Phet	24.3	20.7	22.5	4.8	6.4	5.6	8,761	22,724	13,984	951	862
Tak	38.7	39.3	39.0	4.2	3.4	3.8	4,234	15,568	9,624	593	537
Sukhothai	32.7	29.3	30.9	5.8	6.9	6.4	4,497	20,933	8,927	599	532
Phitsanulok	27.9	24.3	26.0	4.6	4.2	4.4	2,316	12,774	6,154	503	437
Phichit	24.6	23.2	23.9	3.6	4.0	3.8	5,199	18,543	9,429	722	584
Phetchabun	37.0	25.2	30.9	3.7	4.1	3.9	7,633	28,569	13,698	1,089	828
<b>Northern Region</b>	<b>30.3</b>	<b>26.4</b>	<b>28.3</b>	<b>4.3</b>	<b>4.5</b>	<b>4.4</b>	<b>3,279</b>	<b>14,852</b>	<b>8,194</b>	<b>567</b>	<b>490</b>
Nakhon Ratchasima	37.4	28.6	32.7	3.8	5.0	4.5	4,264	20,766	10,916	868	663
Buri Ram	33.2	23.7	28.3	3.1	4.8	3.9	7,016	31,355	15,839	1,176	744
Surin	33.2	29.5	31.3	3.3	3.9	3.6	6,870	26,422	15,099	1,184	765
Si Sa Ket	23.9	20.9	22.3	2.3	2.5	2.4	8,756	35,238	16,233	1,190	1,030
Ubon Ratchathani	30.2	26.7	28.4	2.4	2.2	2.3	4,797	20,993	10,496	758	599
Yasothon	36.1	30.2	33.2	2.2	3.1	2.6	7,203	25,725	10,804	741	679
Chaiyaphum	22.5	27.9	25.3	5.1	6.5	5.8	7,413	22,844	16,707	1,073	949
Amnat Charoen	36.2	26.1	31.3	3.0	2.3	2.6	6,832	26,352	11,529	802	809
Nong Bua Lam Phu	32.7	46.2	39.6	3.4	3.8	3.6	7,533	31,072	19,121	1,237	1,115
Khon Kaen	39.2	39.3	39.3	3.9	5.4	4.6	2,098	8,420	7,819	526	473
Udon Thani	20.0	21.0	20.5	2.7	2.5	2.6	4,691	24,272	10,263	823	618
Loei	28.4	19.3	24.3	4.5	5.5	5.0	5,689	18,071	10,414	676	651
Nong Khai	29.3	28.5	28.9	3.1	3.6	3.3	6,391	22,528	15,018	952	835
Maha Sarakham	51.2	38.7	44.9	2.5	2.1	2.3	6,123	31,228	11,859	987	888
Roi Et	46.1	35.8	40.9	3.7	3.5	3.6	8,033	38,509	14,232	1,054	971
Kalasin	31.7	23.0	27.6	3.3	4.8	4.1	7,570	26,393	13,377	955	824
Sakon Nakhon	30.6	22.2	26.4	2.5	2.7	2.6	7,770	34,721	14,814	950	818
Nakhon Phanom	10.1	14.7	12.3	2.9	2.1	2.5	9,537	30,271	12,659	861	788
Mukdahan	20.1	16.1	18.2	3.6	4.1	3.8	5,996	16,789	10,832	677	621
<b>Northeastern Region</b>	<b>32.0</b>	<b>27.5</b>	<b>29.7</b>	<b>3.2</b>	<b>3.8</b>	<b>3.5</b>	<b>5,308</b>	<b>22,020</b>	<b>12,197</b>	<b>878</b>	<b>724</b>
Nakhon Si Thammarat	36.3	34.8	35.5	3.5	4.4	4.0	4,898	21,553	10,405	769	669
Krabi	38.2	33.3	35.8	2.8	3.2	3.0	5,814	17,696	8,660	697	696
Phang-nga	39.5	43.1	41.3	1.4	1.3	1.4	3,567	12,307	6,477	347	395
Phuket	51.1	37.8	43.8	0.5	0.7	0.6	1,657	8,559	4,740	362	317
Surat Thani	36.5	33.0	34.7	1.7	2.3	2.0	3,330	15,829	6,437	442	349
Ranong	40.5	35.8	37.9	0.5	0.5	0.5	4,007	12,021	7,840	425	430
Chumphon	22.1	19.9	21.0	1.0	1.2	1.1	4,446	21,824	8,002	560	406
Songkhla	48.3	54.9	51.8	1.5	1.6	1.6	1,517	13,482	6,383	411	385
Satun	46.6	34.2	40.6	2.2	2.4	2.3	6,289	14,151	7,862	560	773
Trang	59.8	49.5	54.7	3.5	4.0	3.8	3,854	13,237	6,029	599	488
Phatthalung	38.9	38.7	38.8	2.9	2.8	2.8	5,987	15,241	9,489	595	641
Pattani	36.2	25.3	30.5	2.9	2.8	2.8	6,182	17,688	9,950	706	750
Yala	34.1	21.5	28.0	1.7	1.5	1.6	3,584	13,808	6,707	424	495
Narathiwat	41.4	17.7	29.7	1.5	1.5	1.5	6,821	25,334	12,023	662	751
<b>Southern Region</b>	<b>41.2</b>	<b>35.7</b>	<b>38.4</b>	<b>2.1</b>	<b>2.4</b>	<b>2.2</b>	<b>3,354</b>	<b>15,918</b>	<b>7,717</b>	<b>532</b>	<b>497</b>

See Annex II for data sources

Table AI.2: Education

Location	Mean years of schooling 2007			Population with no education 2007				Educational attainment of population aged 15 and over 2007					
	Male	Female	Total	Male	Female	Total		Less than primary	Primary	Lower secondary	Upper secondary	Diploma	University
	(years)	(years)	(years)	(number)	(number)	(number)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
	1	2	3	4	5	6	7	8	9	10	11	12	13
<b>Kingdom</b>	<b>7.94</b>	<b>7.44</b>	<b>7.68</b>	<b>823,742</b>	<b>1,701,579</b>	<b>2,525,321</b>	<b>4.9</b>	<b>31.8</b>	<b>20.4</b>	<b>17.7</b>	<b>12.8</b>	<b>3.5</b>	<b>8.5</b>
<b>Bangkok Metropolis</b>	<b>10.37</b>	<b>9.89</b>	<b>10.11</b>	<b>51,222</b>	<b>133,197</b>	<b>184,418</b>	<b>3.2</b>	<b>18.3</b>	<b>14.4</b>	<b>16.7</b>	<b>18.6</b>	<b>4.8</b>	<b>23.1</b>
Samut Prakan	9.81	9.05	9.41	6,578	17,145	23,723	2.2	17.4	17.4	21.4	22.4	6.8	10.9
Nonthaburi	10.84	10.30	10.54	4,717	12,371	17,088	1.6	17.1	13.3	16.1	19.3	6.2	26.0
Pathum Thani	9.86	9.76	9.81	3,787	6,581	10,368	1.6	19.2	12.4	22.7	21.9	6.6	15.3
Phra Nakhon Si Ayutthaya	8.14	7.59	7.85	2,300	7,738	10,038	1.7	35.3	16.0	22.3	14.4	3.8	6.5
Ang Thong	7.88	7.34	7.60	887	4,005	4,892	2.1	37.1	17.2	19.3	14.2	3.4	6.1
Lop Buri	7.85	7.33	7.59	8,580	19,827	28,407	4.7	35.5	16.4	18.4	13.3	4.3	7.4
Sing Buri	8.16	7.44	7.81	1,688	5,981	7,669	4.0	35.4	14.5	18.2	16.2	4.9	6.8
Chai Nat	7.33	6.40	6.85	2,667	14,913	17,580	6.1	39.5	19.4	15.3	11.7	3.6	4.3
Saraburi	8.61	7.79	8.19	4,060	13,657	17,717	3.2	32.8	15.0	19.1	13.9	7.0	8.9
Chon Buri	9.00	8.32	8.63	5,574	19,205	24,779	2.7	25.4	14.8	22.1	16.0	5.2	9.9
Rayong	8.46	7.80	8.11	4,540	12,814	17,353	4.1	28.4	19.2	19.5	13.4	6.4	8.3
Chanthaburi	7.55	7.10	7.33	4,084	14,184	18,268	4.3	33.8	23.4	17.0	10.9	2.8	7.4
Trat	7.14	6.56	6.87	6,458	11,209	17,667	8.9	31.2	24.9	14.2	8.1	2.9	7.2
Chachoengsao	7.90	7.28	7.59	4,954	14,652	19,606	3.8	33.9	17.9	20.9	14.1	4.3	5.1
Prachin Buri	7.51	7.06	7.29	3,480	7,720	11,200	3.6	36.9	19.0	19.2	12.6	4.4	4.3
Nakhon Nayok	7.59	6.95	7.29	2,597	4,624	7,222	3.9	35.6	22.7	16.5	11.9	3.3	6.2
Sa Kaeo	7.12	6.41	6.77	17,219	24,734	41,954	7.1	34.4	23.1	18.6	9.7	1.8	5.0
Ratchaburi	7.84	7.32	7.56	6,208	23,258	29,466	4.4	34.3	18.4	18.8	12.9	3.9	7.3
Kanchanaburi	6.85	6.12	6.50	36,687	46,995	83,682	12.4	33.6	20.3	15.2	10.0	2.1	6.0
Suphan Buri	7.11	6.68	6.88	6,613	29,246	35,859	5.4	37.9	20.8	18.0	9.8	3.2	4.9
Nakhon Pathom	8.26	7.58	7.91	10,831	24,195	35,026	4.5	27.9	21.0	20.7	14.4	2.9	8.5
Samut Sakhon	7.91	7.36	7.64	14,850	22,077	36,927	8.4	20.2	25.8	20.0	14.5	2.9	7.0
Samut Songkhram	7.88	7.43	7.63	1,216	3,835	5,051	3.6	31.7	22.7	18.3	12.7	3.8	7.3
Phetchaburi	7.86	7.32	7.57	3,309	7,207	10,516	3.0	36.3	18.7	17.4	14.3	3.0	7.1
Prachuap Khiri Khan	7.58	7.01	7.29	5,074	13,743	18,816	5.1	33.7	22.1	17.4	12.0	2.6	6.9
<b>Central Region</b>	<b>8.3</b>	<b>7.8</b>	<b>8.1</b>	<b>168,959</b>	<b>381,916</b>	<b>550,875</b>	<b>4.3</b>	<b>29.4</b>	<b>18.3</b>	<b>19.1</b>	<b>14.7</b>	<b>4.4</b>	<b>9.3</b>
Chiang Mai	7.66	7.03	7.33	49,537	88,758	138,295	10.7	34.1	14.3	14.6	12.5	5.0	8.9
Lamphun	7.23	6.85	7.04	11,094	16,368	27,462	9.1	37.1	14.6	15.3	14.0	4.2	5.7
Lampang	7.44	6.89	7.15	17,335	39,977	57,312	9.1	35.9	14.3	17.6	13.0	2.7	7.3
Uttaradit	7.60	7.06	7.32	3,613	11,295	14,907	4.1	38.4	19.5	15.9	12.4	2.6	7.1
Phrae	7.01	6.77	6.89	9,699	14,444	24,142	6.9	41.5	16.1	14.7	11.8	3.5	5.6
Nan	6.48	5.24	5.89	31,942	42,913	74,855	20.5	32.7	15.9	15.7	8.2	1.4	5.7
Phayao	6.82	6.09	6.45	14,601	31,184	45,785	11.6	37.2	18.1	15.0	11.2	1.7	5.3
Chiang Rai	6.53	5.93	6.23	48,058	95,413	143,471	13.9	35.9	17.3	17.1	10.0	2.0	3.8
Mae Hong Son	4.66	4.48	4.58	35,573	30,612	66,185	37.5	13.8	29.0	10.7	5.2	1.2	2.6
Nakhon Sawan	7.31	6.63	6.95	17,438	44,734	62,172	8.0	40.3	15.1	16.2	10.1	3.1	7.2
Uthai Thani	7.30	6.50	6.89	3,082	8,979	12,061	5.1	41.2	19.9	15.8	9.2	1.5	7.3
Kamphaeng Phet	7.24	6.45	6.82	9,355	32,384	41,739	6.7	39.4	21.0	13.5	9.6	4.0	5.8
Tak	6.82	6.11	6.45	20,153	33,399	53,552	14.7	30.4	18.8	12.3	10.3	2.1	6.5
Sukhothai	7.14	6.16	6.59	3,277	11,839	15,116	3.2	48.1	16.5	16.6	9.8	1.9	3.9
Phitsanulok	7.57	7.18	7.38	6,902	17,980	24,882	4.1	37.0	17.3	20.1	12.2	3.2	6.0
Phichit	7.29	6.31	6.78	3,751	18,094	21,845	5.3	44.2	16.0	15.9	9.8	2.4	6.4
Phetchabun	7.16	6.48	6.83	14,721	41,350	56,071	6.9	39.3	18.1	17.9	8.1	2.0	7.7
<b>Northern Region</b>	<b>7.1</b>	<b>6.5</b>	<b>6.8</b>	<b>300,131</b>	<b>579,722</b>	<b>879,853</b>	<b>9.5</b>	<b>37.4</b>	<b>17.0</b>	<b>16.0</b>	<b>10.7</b>	<b>2.9</b>	<b>6.4</b>
Nakhon Ratchasima	7.67	7.01	7.31	15,929	53,628	69,556	3.4	37.6	19.1	18.7	12.9	3.3	5.0
Buri Ram	7.00	6.30	6.62	23,043	54,537	77,580	6.5	35.0	25.1	19.0	8.3	2.5	3.5
Surin	7.67	6.83	7.24	14,928	29,482	44,410	4.0	37.5	20.8	16.9	10.9	2.4	7.4
Si Sa Ket	6.77	6.37	6.57	19,949	21,955	41,905	3.7	39.6	28.8	14.1	8.7	1.8	3.2
Ubon Ratchathani	7.21	6.76	6.97	6,516	14,519	21,035	1.7	37.2	28.3	17.7	9.2	1.9	4.0
Yasothon	7.37	6.36	6.86	1,328	2,983	4,311	1.1	42.9	24.2	16.2	8.9	2.9	3.8
Chaiyaphum	7.03	6.61	6.83	5,348	13,527	18,875	2.2	38.9	26.8	18.2	7.9	2.2	3.9
Amnat Charoen	6.87	6.73	6.80	7,745	8,608	16,353	3.8	37.2	28.9	14.7	9.1	2.9	3.5
Nong Bua Lam Phu	7.48	7.10	7.29	3,601	7,699	11,300	2.0	33.3	28.5	18.7	9.1	3.3	5.1
Khon Kaen	7.62	6.69	7.15	7,684	22,026	29,710	2.3	38.1	23.4	17.2	10.8	3.3	4.9
Udon Thani	7.78	7.38	7.60	7,812	12,382	20,194	1.9	32.5	24.8	18.7	13.8	3.0	5.3
Loei	6.68	6.06	6.37	11,741	18,999	30,740	6.0	37.3	28.7	17.0	6.8	1.3	3.0
Nong Khai	7.17	6.63	6.91	4,243	16,420	20,663	2.7	35.8	28.6	18.0	9.1	2.1	3.6
Maha Sarakham	7.62	7.07	7.34	7,977	4,126	12,103	1.8	37.8	23.8	15.3	13.9	1.6	5.8
Roi Et	7.28	6.87	7.07	2,852	3,885	6,736	0.7	40.2	24.1	18.7	10.0	2.8	3.4
Kalasin	7.79	7.19	7.47	2,320	4,841	7,162	1.0	36.1	25.4	17.0	11.9	2.5	6.0
Sakon Nakhon	7.31	7.08	7.19	2,477	11,684	14,161	1.7	32.1	31.9	18.0	9.8	2.3	4.2
Nakhon Phanom	6.90	6.64	6.77	4,971	6,288	11,259	2.7	37.7	27.8	18.3	8.5	1.3	3.7
Mukdahan	7.66	7.03	7.34	2,594	7,145	9,739	3.4	33.7	24.5	19.1	10.4	3.1	5.7
<b>Northeastern Region</b>	<b>7.3</b>	<b>6.8</b>	<b>7.1</b>	<b>153,057</b>	<b>314,734</b>	<b>467,792</b>	<b>2.8</b>	<b>36.9</b>	<b>25.3</b>	<b>17.6</b>	<b>10.3</b>	<b>2.5</b>	<b>4.5</b>
Nakhon Si Thammarat	8.16	7.44	7.77	8,556	38,597	47,153	3.8	32.5	19.9	18.4	13.7	4.4	7.1
Krabi	7.51	7.39	7.45	2,658	8,669	11,327	3.7	29.2	28.2	18.5	11.6	3.5	5.3
Phang-nga	7.67	7.41	7.54	4,248	4,720	8,968	5.0	30.4	18.8	23.4	10.8	4.1	5.6
Phuket	8.97	9.15	9.07	4,400	6,687	11,087	4.6	19.9	13.2	21.3	18.4	5.7	11.4
Surat Thani	8.02	7.66	7.83	4,888	19,585	24,473	3.2	28.8	23.3	19.7	13.4	3.7	7.4
Ranong	7.40	6.89	7.14	4,676	8,139	12,815	8.7	30.6	21.9	17.6	12.0	3.1	6.0
Chumphon	7.53	7.43	7.48	5,549	4,660	10,208	2.7	33.1	23.4	19.2	12.5	4.4	4.8
Songkhla	8.83	8.40	8.62	19,436	37,714	57,150	5.5	22.9	18.9	19.6	15.9	6.0	11.3
Satun	7.60	7.29	7.44	3,920	9,241	13,161	6.2	25.6	27.2	21.0	10.4	3.2	6.3
Trang	7.72	7.69	7.70	8,621	12,517	21,138	4.3	31.2	21.7	18.4	12.6	5.3	6.5
Phatthalung	8.31	7.53	7.91	2,159	8,906	11,065	2.8	32.1	19.8	19.6	13.4	5.4	6.9
Pattani	6.71	6.24	6.50	25,586	36,308	61,894	15.6	25.7	25.2	14.8	9.7	3.0	5.8
Yala	7.39	7.16											

Table AI.2: Education (continued)

Location	Gross enrolment 2007									Average O-Net score 2007			Students per classroom 2007		
	Primary (%)			Lower secondary (%)			Upper secondary & vocational (%)			Upper secondary students (%)			Primary	Lower secondary	Upper secondary
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	(number)	(number)	(number)
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
<b>Kingdom</b>	<b>105.0</b>	<b>103.9</b>	<b>104.5</b>	<b>95.0</b>	<b>97.3</b>	<b>96.1</b>	<b>60.75</b>	<b>73.07</b>	<b>66.76</b>	<b>40.59</b>	<b>41.78</b>	<b>41.18</b>	<b>23</b>	<b>36</b>	<b>38</b>
<b>Bangkok Metropolis</b>	<b>112.2</b>	<b>112.1</b>	<b>112.1</b>	<b>99.0</b>	<b>100.4</b>	<b>99.7</b>	<b>101.82</b>	<b>112.22</b>	<b>106.97</b>	<b>46.25</b>	<b>48.24</b>	<b>47.24</b>	<b>34</b>	<b>44</b>	<b>41</b>
Samut Prakan	102.6	104.2	103.4	91.4	95.3	93.3	42.12	52.38	47.16	43.56	45.09	44.33	36	45	40
Nonthaburi	99.9	98.7	99.3	85.4	92.1	88.7	46.86	66.64	56.73	43.81	45.43	44.62	32	43	39
Pathum Thani	102.5	101.1	101.9	89.9	89.3	89.6	53.80	59.15	56.45	41.15	42.84	41.99	32	42	40
Phra Nakhon Si Ayutthaya	116.0	114.9	115.5	105.1	103.9	104.5	66.46	77.07	71.58	40.08	42.08	41.08	23	37	37
Ang Thong	106.9	104.2	105.6	103.6	100.0	101.9	61.40	68.18	64.67	39.38	40.39	39.88	21	36	35
Lop Buri	105.1	104.0	104.5	102.5	105.6	104.0	71.18	84.81	77.90	40.38	42.37	41.38	21	36	35
Sing Buri	113.6	119.4	116.4	111.4	102.5	107.2	92.27	84.07	88.24	39.37	40.31	39.84	12	25	34
Chai Nat	97.6	96.9	97.3	93.6	95.0	94.2	56.23	66.83	61.38	38.65	40.44	39.55	18	33	35
Saraburi	107.9	108.8	108.3	93.7	94.4	94.0	64.69	68.51	66.58	40.20	41.63	40.91	25	41	37
Chon Buri	121.0	120.6	120.8	112.2	110.5	111.4	85.97	97.73	91.77	42.95	44.25	43.60	36	44	41
Rayong	125.3	123.5	124.4	107.3	105.3	106.3	66.59	76.82	71.63	42.20	42.84	42.52	31	42	38
Chanthaburi	112.8	112.3	112.6	95.0	100.2	97.6	57.56	71.79	64.53	40.64	41.66	41.15	27	38	38
Trat	115.9	116.8	116.3	94.3	99.2	96.7	54.73	67.02	60.74	41.67	42.21	41.94	23	35	32
Chachoengsao	111.8	107.9	109.9	104.4	100.9	102.7	72.17	72.54	72.35	40.98	42.70	41.84	24	37	37
Prachin Buri	106.8	105.4	106.1	104.3	106.5	105.4	65.04	81.56	73.01	39.14	40.56	39.85	22	37	36
Nakhon Nayok	108.9	107.3	108.1	105.5	103.3	104.4	65.10	79.02	71.55	46.80	40.82	43.81	21	35	33
Sa Kaeo	98.4	98.2	98.3	87.0	91.3	89.1	44.16	54.26	49.09	37.74	38.99	38.37	23	35	35
Ratchaburi	113.8	113.9	113.8	98.7	101.0	99.8	59.88	70.26	64.89	42.36	43.27	42.81	26	39	39
Kanchanaburi	117.8	115.5	116.7	92.0	93.2	92.6	48.08	61.27	54.46	40.07	41.30	40.68	23	34	37
Suphan Buri	103.2	101.7	102.5	87.5	90.6	89.0	49.67	62.03	55.61	40.16	42.29	41.22	21	37	36
Nakhon Pathom	119.7	118.3	119.0	107.1	108.7	107.9	65.24	79.37	72.06	43.91	44.91	44.41	30	42	40
Samut Sakhon	112.0	111.4	111.7	78.5	80.8	79.6	41.47	44.98	43.21	41.94	42.91	42.43	36	46	39
Samut Songkhram	107.3	105.5	106.4	98.1	100.4	99.2	62.47	69.81	66.08	42.06	43.40	42.73	24	39	32
Phetchaburi	101.9	101.1	101.5	105.4	105.2	105.3	62.00	73.78	67.76	40.52	42.64	41.58	20	36	34
Prachuap Khiri Khan	109.8	109.4	109.6	108.3	111.5	109.8	48.30	60.14	54.01	40.49	41.68	41.08	24	36	30
<b>Central Region</b>	<b>109.9</b>	<b>109.1</b>	<b>109.5</b>	<b>97.8</b>	<b>99.2</b>	<b>98.5</b>	<b>59.44</b>	<b>70.06</b>	<b>64.62</b>	<b>41.68</b>	<b>42.82</b>	<b>42.25</b>	<b>26</b>	<b>39</b>	<b>37</b>
Chiang Mai	123.5	118.7	121.2	97.8	104.2	100.9	73.12	80.20	76.61	42.43	43.79	43.11	21	36	42
Lamphun	110.8	109.6	110.2	103.9	99.0	101.5	75.73	82.92	79.25	40.08	42.06	41.07	16	37	38
Lampang	104.0	103.1	103.6	96.7	100.8	98.7	76.90	84.41	80.54	40.90	42.42	41.66	18	36	36
Uttaradit	97.1	97.4	97.2	94.1	94.7	94.4	71.53	79.10	75.21	40.01	41.85	40.93	18	34	37
Phrae	103.2	102.6	102.9	104.9	103.5	104.2	82.94	85.76	84.30	41.40	42.78	42.09	17	36	38
Nan	105.6	103.5	104.6	95.0	96.6	95.8	72.78	77.22	74.95	40.31	41.85	41.08	16	31	36
Phayao	101.8	100.7	101.3	97.5	97.9	97.6	72.00	79.43	75.63	39.95	41.16	40.55	18	35	41
Chiang Rai	118.4	118.9	118.6	100.4	104.0	102.2	63.51	73.85	68.55	40.78	41.62	41.20	21	35	41
Mae Hong Son	122.7	122.7	122.7	80.4	87.0	83.6	40.36	51.85	46.03	37.04	38.07	37.56	15	30	38
Nakhon Sawan	100.8	99.6	100.2	93.7	94.6	94.1	50.75	62.73	56.65	40.63	41.96	41.29	20	37	39
Uthai Thani	99.3	98.1	98.8	93.8	96.4	95.0	57.51	66.91	62.08	39.07	40.81	39.94	16	32	34
Kamphaeng Phet	101.4	100.4	100.9	86.3	88.6	87.4	40.21	53.09	46.41	38.58	39.70	39.14	20	34	36
Tak	117.6	112.5	115.1	87.9	88.9	88.4	50.66	56.23	53.34	39.46	40.48	39.97	20	36	40
Sukhothai	96.0	94.9	95.4	91.0	91.9	91.5	61.09	76.37	68.59	39.16	40.24	39.70	19	35	40
Phitsanulok	100.8	98.9	99.9	99.9	101.1	100.5	67.19	75.69	71.33	40.32	42.44	41.38	20	33	36
Phichit	97.2	97.2	97.2	91.0	91.8	91.3	47.81	57.83	52.61	38.42	40.15	39.28	18	32	34
Phetchabun	97.8	96.3	97.1	95.9	98.7	97.3	45.71	58.21	51.75	38.21	39.80	39.01	19	33	37
<b>Northern Region</b>	<b>106.8</b>	<b>105.2</b>	<b>106.0</b>	<b>95.3</b>	<b>97.6</b>	<b>96.4</b>	<b>61.87</b>	<b>71.15</b>	<b>66.39</b>	<b>40.27</b>	<b>41.67</b>	<b>40.97</b>	<b>19</b>	<b>34</b>	<b>38</b>
Nakhon Ratchasima	100.9	99.8	100.3	97.2	97.6	97.4	56.25	71.06	63.42	38.90	40.53	39.71	21	34	38
Buri Ram	98.3	97.1	97.7	92.5	96.3	94.3	47.23	61.04	53.94	38.16	39.72	38.94	22	34	40
Surin	97.7	96.4	97.1	91.7	93.6	92.6	49.05	62.49	55.58	38.11	39.64	38.87	22	34	36
Si Sa Ket	99.3	98.2	98.8	93.2	97.2	95.1	56.98	73.88	65.25	37.50	39.16	38.33	21	35	39
Ubon Ratchathani	97.5	97.4	97.5	94.5	96.9	95.7	45.84	63.11	54.31	38.55	39.72	39.14	20	37	40
Yasothon	99.5	98.3	98.9	92.7	94.5	93.5	53.69	67.78	60.52	38.08	39.38	38.73	18	32	39
Chaiyaphum	95.0	94.5	94.8	91.4	93.5	92.4	49.56	62.74	55.93	36.89	38.93	37.91	17	34	38
Amnat Charoen	97.0	96.7	96.9	97.3	96.8	97.1	55.49	71.11	62.95	37.39	39.15	38.27	18	35	40
Nong Bua Lam Phu	96.9	96.3	96.6	88.9	86.4	87.7	46.15	53.52	49.70	36.69	38.14	37.41	19	33	37
Khon Kaen	103.1	102.8	102.9	102.0	101.0	101.5	72.39	82.10	77.13	39.00	40.81	39.91	20	37	43
Udon Thani	98.3	98.1	98.2	89.8	94.2	91.9	55.18	65.38	60.13	39.41	40.80	40.10	22	35	36
Loei	98.8	97.8	98.3	103.6	98.5	101.1	55.84	68.01	61.80	37.54	39.22	38.38	16	34	39
Nong Khai	96.4	95.6	96.0	92.1	93.3	92.7	49.30	59.48	54.26	37.25	38.80	38.03	22	35	38
Maha Sarakham	96.8	96.9	96.9	96.4	94.5	95.5	59.01	69.38	64.04	37.64	39.44	38.54	20	37	42
Roi Et	97.7	98.2	98.0	93.1	93.0	93.1	55.80	70.84	63.08	38.22	39.71	38.96	20	34	40
Kalasin	97.8	96.8	97.3	92.5	94.3	93.4	59.45	70.97	65.04	36.42	38.33	37.38	19	32	37
Sakon Nakhon	98.4	96.9	97.7	93.5	95.5	94.5	53.02	66.38	59.54	38.34	39.87	39.10	22	34	40
Nakhon Phanom	97.7	96.9	97.3	92.0	92.4	92.2	50.20	61.90	55.97	37.18	38.18	37.68	20	34	34
Mukdahan	101.8	99.9	100.9	93.9	99.4	96.6	58.18	70.50	64.25	37.70	40.09	38.89	19	32	33
<b>Northeastern Region</b>	<b>98.6</b>	<b>97.9</b>	<b>98.2</b>	<b>94.3</b>	<b>95.6</b>	<b>94.9</b>	<b>54.41</b>	<b>67.59</b>	<b>60.82</b>	<b>38.07</b>	<b>39.69</b>	<b>38.88</b>	<b>20</b>	<b>35</b>	<b>39</b>
Nakhon Si Thammarat	104.4	104.6	104.5	90.4	94.6	92.4	55.65	71.73	63.46	40.75	41.83	41.29	23	34	34
Krabi	108.7	106.7	107.8	88.4	94.3	91.2	47.82	60.22	53.95	38.28	39.41	38.84	24	35	37
Phang-nga	103.1	99.2	101.2												

Table AI.3: Employment

Location	Population, 2007			Population aged 15 and over, 2007			Employment, 2007		
	Male	Female	Total	Male	Female	Total	Number of current labour force		
	(number)	(number)	(number)	(number)	(number)	(number)	Male	Female	Total
	1	2	3	4	5	6	7	8	9
<b>Kingdom</b>	<b>32,286,017</b>	<b>33,514,063</b>	<b>65,800,080</b>	<b>24,789,694</b>	<b>26,329,046</b>	<b>51,118,740</b>	<b>20,234,800</b>	<b>17,329,405</b>	<b>37,564,205</b>
<b>Bangkok Metropolitan</b>	<b>3,256,831</b>	<b>3,663,447</b>	<b>6,920,278</b>	<b>2,647,934</b>	<b>3,091,719</b>	<b>5,739,652</b>	<b>2,076,173</b>	<b>1,968,792</b>	<b>4,044,966</b>
Samut Prakan	624,141	690,638	1,314,779	518,927	583,660	1,102,587	445,652	424,999	870,651
Nonthaburi	581,583	675,212	1,256,795	478,737	569,926	1,048,663	387,638	363,779	751,418
Pathum Thani	374,881	407,270	782,151	299,727	330,602	630,329	253,804	223,653	477,457
Phra Nakhon Si Ayutthaya	346,379	391,067	737,446	273,397	315,848	589,245	211,671	204,817	416,488
Ang Thong	141,716	143,578	285,294	111,856	115,960	227,816	90,368	81,358	171,726
Lop Buri	378,174	378,513	756,687	298,492	305,708	604,200	243,664	206,608	450,272
Sing Buri	124,821	117,824	242,645	98,520	95,161	193,681	78,411	61,328	139,740
Chai Nat	173,750	185,199	358,949	137,141	149,578	286,719	111,174	98,517	209,691
Saraburi	338,242	355,987	694,229	266,974	287,516	554,490	216,453	185,029	401,482
Chon Buri	519,447	598,952	1,118,399	420,414	490,317	910,731	347,738	324,694	672,432
Rayong	254,761	279,438	534,199	202,901	222,947	425,848	174,432	149,338	323,769
Chanthaburi	276,792	261,386	538,178	219,448	209,864	429,312	184,455	143,637	328,092
Trat	136,449	117,317	253,766	106,931	91,630	198,561	91,455	60,077	151,532
Chachoengsao	328,733	332,268	661,001	256,732	264,614	521,346	205,986	156,029	362,015
Prachin Buri	200,498	194,628	395,126	155,243	153,652	308,895	126,753	106,807	233,560
Nakhon Nayok	127,190	110,653	237,843	98,844	88,169	187,013	78,012	57,975	135,987
Sa Kaeo	401,541	375,733	777,274	301,270	285,820	587,090	249,476	193,298	442,774
Ratchaburi	402,274	451,222	853,496	313,126	361,226	674,352	257,311	239,334	496,645
Kanchanaburi	448,972	404,941	853,913	349,475	324,175	673,650	293,544	220,513	514,057
Suphan Buri	395,728	437,608	833,336	308,031	350,328	658,359	250,415	235,412	485,828
Nakhon Pathom	483,297	493,213	976,510	378,244	396,857	775,101	312,723	273,637	586,360
Samut Sakhon	277,733	256,442	534,175	225,368	213,314	438,682	200,891	158,318	359,209
Samut Songkhram	83,955	94,970	178,925	65,349	76,028	141,377	51,889	50,463	102,352
Phetchaburi	205,251	233,737	438,988	159,765	187,119	346,884	128,958	125,157	254,115
Prachuap Khiri Khan	231,867	233,457	465,324	180,483	186,894	367,377	148,865	124,156	273,021
<b>Central Region</b>	<b>7,858,173</b>	<b>8,221,251</b>	<b>16,079,424</b>	<b>6,225,394</b>	<b>6,656,911</b>	<b>12,882,305</b>	<b>5,141,737</b>	<b>4,468,935</b>	<b>9,610,672</b>
Chiang Mai	776,697	830,963	1,607,660	621,720	675,678	1,297,398	502,421	470,350	972,771
Lamphun	182,560	181,678	364,238	148,851	152,053	300,904	124,103	110,542	234,644
Lampang	376,166	403,836	780,002	301,206	327,516	628,722	231,688	208,465	440,153
Uttaradit	218,296	232,389	450,685	173,467	188,894	362,361	133,644	108,384	242,028
Phrae	216,010	221,864	437,874	173,992	177,521	351,513	140,893	123,853	264,746
Nan	245,701	220,526	466,227	191,919	173,079	364,998	161,592	120,744	282,336
Phayao	247,278	249,037	496,315	195,969	199,474	395,443	157,319	141,303	298,621
Chiang Rai	642,343	667,040	1,309,383	502,220	526,606	1,028,826	397,296	355,524	752,820
Mae Hong Son	141,564	115,423	256,987	100,090	76,244	176,334	85,442	57,798	143,240
Nakhon Sawan	458,911	508,867	967,778	360,886	414,801	775,687	294,361	273,058	567,419
Uthai Thani	146,930	154,604	301,534	113,922	122,995	236,917	90,579	81,923	172,502
Kamphaeng Phet	391,919	428,244	820,163	295,970	330,498	626,468	248,401	205,145	453,546
Tak	242,212	255,683	497,895	177,455	187,673	365,128	143,927	125,353	269,280
Sukhothai	262,680	321,839	584,519	205,403	267,605	473,008	158,370	180,956	339,325
Phitsanulok	407,613	375,366	782,979	320,347	291,724	612,071	244,547	189,833	434,380
Phichit	251,037	266,931	517,968	194,306	215,007	409,313	153,397	133,867	287,265
Phetchabun	535,368	511,356	1,046,724	411,730	400,921	812,651	344,427	278,924	623,351
<b>Northern Region</b>	<b>5,743,284</b>	<b>5,945,645</b>	<b>11,688,928</b>	<b>4,489,452</b>	<b>4,728,288</b>	<b>9,217,740</b>	<b>3,612,407</b>	<b>3,166,021</b>	<b>6,778,428</b>
Nakhon Ratchasima	1,256,288	1,440,373	2,696,661	946,238	1,112,199	2,058,437	755,118	667,361	1,422,478
Buri Ram	745,184	861,507	1,606,691	547,516	641,959	1,189,475	442,125	414,304	856,429
Surin	756,238	767,821	1,524,059	546,758	566,500	1,113,258	418,251	350,085	768,336
Si Sa Ket	777,061	752,604	1,529,665	562,708	558,053	1,120,761	471,665	386,131	857,796
Ubon Ratchathani	823,187	892,141	1,715,328	598,901	660,145	1,259,046	486,962	395,924	882,886
Yasothon	273,654	259,913	533,567	201,363	204,229	405,592	167,721	147,343	315,064
Chaiyaphum	577,609	531,223	1,108,832	435,651	408,981	844,632	360,191	275,174	635,365
Amnat Charoen	296,293	292,754	589,047	218,753	214,968	433,721	188,160	152,839	341,000
Nong Bua Lam Phu	403,339	361,356	764,695	296,623	280,898	577,521	253,405	195,939	449,344
Khon Kaen	823,785	824,129	1,647,914	632,014	638,982	1,270,996	515,298	377,505	892,803
Udon Thani	782,395	652,500	1,434,895	580,724	487,727	1,068,451	458,197	303,155	761,352
Loei	327,553	331,133	658,686	253,235	258,675	511,910	214,068	175,764	389,833
Nong Khai	521,990	495,680	1,017,670	387,577	370,983	758,560	322,857	230,247	553,104
Maha Sarakham	436,372	439,619	875,991	330,713	342,900	673,613	284,044	246,748	530,793
Roi Et	674,350	705,337	1,379,687	500,454	535,437	1,035,891	407,217	377,547	784,764
Kalasin	480,299	513,121	993,420	360,483	391,200	751,683	299,686	255,782	555,468
Sakon Nakhon	552,181	534,034	1,086,215	410,876	402,597	813,473	321,364	243,193	564,557
Nakhon Phanom	286,417	279,345	565,762	212,452	209,704	422,156	167,221	126,965	294,185
Mukdahan	187,203	194,575	381,778	137,486	145,033	282,519	119,206	108,673	227,879
<b>Northeastern Region</b>	<b>10,981,396</b>	<b>11,129,163</b>	<b>22,110,560</b>	<b>8,160,524</b>	<b>8,431,169</b>	<b>16,591,693</b>	<b>6,652,758</b>	<b>5,430,680</b>	<b>12,083,438</b>
Nakhon Si Thammarat	763,341	882,159	1,645,500	565,820	668,314	1,234,134	491,640	470,269	961,909
Krabi	202,069	216,930	418,999	146,305	157,259	303,564	123,767	113,519	237,285
Phang-nga	121,471	118,087	239,558	90,488	90,043	180,531	76,271	51,985	128,256
Phuket	147,106	161,064	308,170	113,767	127,262	241,029	92,371	80,368	172,739
Surat Thani	493,066	497,647	990,713	373,573	383,232	756,805	320,460	256,578	577,039
Ranong	95,039	98,793	193,832	71,835	74,866	146,701	64,025	42,487	106,512
Chumphon	251,222	238,333	489,555	191,957	184,119	376,076	160,028	118,724	278,751
Songkhla	678,518	673,855	1,352,373	509,440	520,426	1,029,866	404,158	351,565	755,723
Satun	145,233	145,708	290,941	104,809	106,753	211,562	94,341	69,963	164,304
Trang	329,984	327,095	657,079	240,512	249,195	489,707	206,812	181,559	388,370
Phatthalung	254,631	266,394	521,025	189,495	203,205	392,700	163,406	153,791	317,197
Pattani	311,392	256,459	567,851	217,364	179,737	397,101	183,093	114,781	297,874
Yala	263,661	245,971	509,632	183,205	177,787	360,992	144,517	111,554	256,071
Narathiwat	389,601	426,063	815,664	267,822	298,762	566,584	226,838	177,836	404,674
<b>Southern Region</b>	<b>4,446,333</b>	<b>4,554,557</b>	<b>9,000,890</b>	<b>3,266,391</b>	<b>3,420,959</b>	<b>6,687,350</b>	<b>2,751,725</b>	<b>2,294,977</b>	<b>5,046,702</b>

See Annex II for data sources

Table AI.3: Employment (continued)

Location	Employment, 2007										
	Number of employed persons			Number of unemployed persons			Unemployment rate	Number of underemployed persons			Under employment rate
	Male	Female	Total	Male	Female	Total	(%)	Male	Female	Total	(%)
	10	11	12	13	14	15	16	17	18	19	20
<b>Kingdom</b>	<b>19,976,668</b>	<b>17,145,310</b>	<b>37,121,977</b>	<b>258,132</b>	<b>184,096</b>	<b>442,228</b>	<b>1.2</b>	<b>324,572</b>	<b>230,849</b>	<b>555,421</b>	<b>1.5</b>
<b>Bangkok Metropolis</b>	<b>2,041,451</b>	<b>1,951,699</b>	<b>3,993,150</b>	<b>34,722</b>	<b>17,093</b>	<b>51,816</b>	<b>1.3</b>	<b>1,901</b>	<b>684</b>	<b>2,586</b>	<b>0.1</b>
Samut Prakan	438,193	412,910	851,103	7,460	12,089	19,548	2.2	1,379	1,617	2,996	0.4
Nonthaburi	383,396	361,877	745,273	4,243	1,902	6,145	0.8	1,936	0	1,936	0.3
Pathum Thani	249,362	220,881	470,242	4,442	2,773	7,215	1.5	278	521	799	0.2
Phra Nakhon Si Ayutthaya	206,725	202,823	409,547	4,946	1,995	6,941	1.7	651	540	1,191	0.3
Ang Thong	88,500	80,968	169,468	1,867	390	2,258	1.3	2,069	799	2,868	1.7
Lop Buri	238,424	205,189	443,613	5,240	1,419	6,659	1.5	968	677	1,644	0.4
Sing Buri	76,106	60,141	136,248	2,305	1,187	3,492	2.5	2,319	319	2,639	1.9
Chai Nat	109,998	97,412	207,410	1,176	1,104	2,281	1.1	4,159	1,934	6,093	2.9
Saraburi	213,332	181,047	394,378	3,121	3,982	7,104	1.8	1,172	828	2,001	0.5
Chon Buri	344,205	321,002	665,207	3,533	3,692	7,225	1.1	668	0	668	0.1
Rayong	171,006	147,241	318,247	3,425	2,097	5,522	1.7	0	0	0	0.0
Chanthaburi	182,286	141,061	323,347	2,169	2,575	4,744	1.4	2,269	1,134	3,403	1.1
Trat	91,132	59,740	150,872	323	337	660	0.4	961	364	1,325	0.9
Chachoengsao	202,114	154,787	356,901	3,871	1,243	5,114	1.4	81	426	507	0.1
Prachin Buri	124,828	105,660	230,488	1,925	1,147	3,072	1.3	999	102	1,101	0.5
Nakhon Nayok	77,226	57,774	135,000	786	201	987	0.7	0	0	0	0.0
Sa Kaeo	239,663	186,249	425,911	9,813	7,050	16,862	3.8	8,249	6,704	14,954	3.5
Ratchaburi	254,046	236,124	490,170	3,265	3,210	6,475	1.3	4,175	3,465	7,640	1.6
Kanchanaburi	292,778	218,965	511,743	766	1,547	2,313	0.4	11,366	6,059	17,424	3.4
Suphan Buri	248,033	233,003	481,037	2,382	2,409	4,791	1.0	119	556	675	0.1
Nakhon Pathom	308,769	270,615	579,384	3,954	3,022	6,976	1.2	519	0	519	0.1
Samut Sakhon	199,901	157,384	357,285	990	934	1,925	0.5	192	0	192	0.1
Samut Songkhram	51,660	50,412	102,072	229	51	279	0.3	401	300	701	0.7
Phetchaburi	128,407	124,052	252,459	551	1,106	1,656	0.7	0	435	435	0.2
Prachuap Khiri Khan	148,171	122,475	270,646	694	1,681	2,375	0.9	377	128	505	0.2
<b>Central Region</b>	<b>5,068,260</b>	<b>4,409,792</b>	<b>9,478,052</b>	<b>73,476</b>	<b>59,143</b>	<b>132,619</b>	<b>1.4</b>	<b>45,309</b>	<b>26,908</b>	<b>72,217</b>	<b>0.8</b>
Chiang Mai	496,874	461,645	958,519	5,547	8,705	14,252	1.5	16,693	13,661	30,354	3.2
Lamphun	122,854	109,740	232,595	1,248	801	2,049	0.9	1,710	606	2,316	1.0
Lampang	226,410	205,872	432,282	5,278	2,593	7,872	1.8	3,907	954	4,860	1.1
Uttaradit	130,758	107,886	238,644	2,886	498	3,384	1.4	3,262	3,730	6,992	2.9
Phrae	140,893	123,434	264,326	419	419	838	0.2	4,907	1,316	6,223	2.4
Nan	160,869	119,648	280,517	723	1,096	1,819	0.6	545	2,138	2,683	1.0
Phayao	155,613	139,512	295,126	1,705	1,790	3,495	1.2	3,452	3,747	7,199	2.4
Chiang Rai	391,940	347,629	739,568	5,356	7,895	13,251	1.8	15,730	11,002	26,731	3.6
Mae Hong Son	84,791	57,446	142,236	651	353	1,004	0.7	523	435	958	0.7
Nakhon Sawan	293,075	271,562	564,636	1,287	1,496	2,783	0.5	7,513	4,670	12,183	2.2
Uthai Thani	90,215	81,849	172,064	364	74	438	0.3	0	0	0	0.0
Kamphaeng Phet	245,679	204,137	449,816	2,722	1,008	3,730	0.8	3,225	6,051	9,275	2.1
Tak	143,533	123,354	266,887	394	1,999	2,394	0.9	2,436	1,908	4,344	1.6
Sukhothai	156,143	179,847	335,990	2,227	1,109	3,336	1.0	6,482	7,777	14,258	4.2
Phitsanulok	238,555	187,419	425,974	5,992	2,414	8,406	1.9	1,659	852	2,511	0.6
Phichit	150,517	131,709	282,226	2,880	2,159	5,039	1.8	3,118	1,259	4,377	1.6
Phetchabun	337,598	272,716	610,314	6,829	6,208	13,037	2.1	8,869	12,045	20,914	3.4
<b>Northern Region</b>	<b>3,566,317</b>	<b>3,125,403</b>	<b>6,691,720</b>	<b>46,089</b>	<b>40,619</b>	<b>86,708</b>	<b>1.3</b>	<b>84,030</b>	<b>72,149</b>	<b>156,179</b>	<b>2.3</b>
Nakhon Ratchasima	741,677	657,893	1,399,571	13,440	9,467	22,908	1.6	1,867	317	2,184	0.2
Buri Ram	438,409	411,927	850,336	3,715	2,378	6,093	0.7	8,803	12,004	20,807	2.4
Surin	415,888	344,451	760,338	2,364	5,634	7,998	1.0	3,465	66	3,531	0.5
Si Sa Ket	465,744	385,781	851,525	5,921	350	6,271	0.7	23,399	9,967	33,367	3.9
Ubon Ratchathani	484,224	392,902	877,126	2,738	3,022	5,760	0.7	2,069	0	2,069	0.2
Yasothon	167,558	146,831	314,389	164	512	675	0.2	2,305	2,336	4,641	1.5
Chaiyaphum	358,920	275,174	634,094	1,271	1,271	2,542	0.2	8,893	6,154	15,047	2.4
Amnat Charoen	185,743	151,870	337,613	2,417	969	3,386	1.0	3,720	1,316	5,036	1.5
Nong Bua Lam Phu	252,239	194,795	447,034	1,167	1,144	2,311	0.5	7,063	6,343	13,406	3.0
Khon Kaen	504,194	371,006	875,200	11,104	6,499	17,603	2.0	5,453	1,199	6,652	0.8
Udon Thani	452,878	302,347	755,225	5,319	808	6,128	0.8	2,295	617	2,912	0.4
Loei	210,057	174,960	385,017	4,011	804	4,816	1.2	525	171	696	0.2
Nong Khai	316,844	228,075	544,919	6,014	2,172	8,186	1.5	2,296	394	2,690	0.5
Maha Sarakham	282,579	246,699	529,279	1,465	49	1,514	0.3	6,989	3,898	10,887	2.1
Roi Et	404,123	373,796	777,919	3,094	3,751	6,845	0.9	3,088	619	3,707	0.5
Kalasin	297,788	255,443	553,230	1,899	339	2,238	0.4	451	610	1,061	0.2
Sakon Nakhon	315,528	241,334	556,862	5,836	1,859	7,695	1.4	4,064	2,813	6,877	1.2
Nakhon Phanom	165,105	126,049	291,155	2,115	915	3,031	1.0	7,558	1,749	9,308	3.2
Mukdahan	118,333	106,535	224,868	872	2,138	3,011	1.3	6,227	6,684	12,911	5.7
<b>Northeastern Region</b>	<b>6,577,831</b>	<b>5,387,868</b>	<b>11,965,699</b>	<b>74,927</b>	<b>42,812</b>	<b>117,739</b>	<b>1.0</b>	<b>100,533</b>	<b>57,258</b>	<b>157,790</b>	<b>1.3</b>
Nakhon Si Thammarat	485,507	463,855	949,362	6,132	6,415	12,547	1.3	35,408	32,458	67,867	7.1
Krabi	122,297	112,252	234,549	1,470	1,267	2,737	1.2	10,385	8,710	19,095	8.1
Phang-nga	75,289	50,959	126,248	982	1,026	2,008	1.6	15,965	8,664	24,629	19.5
Phuket	91,621	79,508	171,129	750	860	1,609	0.9	0	0	0	0.0
Surat Thani	319,711	255,258	574,969	749	1,320	2,069	0.4	623	2,115	2,738	0.5
Ranong	63,793	42,224	106,016	232	263	495	0.5	0	0	0	0.0
Chumphon	158,834	118,169	277,002	1,194	555	1,749	0.6	1,647	1,294	2,941	1.1
Songkhla	398,311	345,732	744,042	5,847	5,833	11,680	1.5	10,443	5,695	16,139	2.2
Satun	93,535	68,584	162,118	806	1,379	2,186	1.3	5,214	3,215	8,429	5.2
Trang	206,417	181,230	387,647	394	329	723	0.2	4,884	5,566	10,450	2.7
Phatthalung	161,622	152,845	314,467	1,784	946	2,730	0.9	4,002	5,095	9,097	2.9
Pattani	180,194	113,642	293,836	2,899	1,139	4,038	1.4	2,538	251	2,789	0.9
Yala	143,847	110,521	254,369	670	1,032	1,702	0.7	689	669	1,358	0.5
Narathiwat	221,830	175,771	397,602	5,008	2,064	7,072	1.7	1,001	118	1,119	0.3
<b>Southern Region</b>	<b>2,722,807</b>	<b>2,270,549</b>	<b>4,993,356</b>	<b>28,917</b>	<b>24,429</b>	<b>53,346</b>	<b>1.1</b>	<b>92,800</b>	<b>73,850</b>	<b>166,650</b>	<b>3.3</b>

See Annex II for data sources

**Table AI.3: Employment** (continued)

Location	Labour protection 2007				
	Employed people with social security		Workers covered by Compensation Fund	Occupational injuries	Occupational injuries
	(number)	(%)	(number)	(number)	(per 1,000 workers covered by WCF)
	21	22	23	24	25
<b>Kingdom</b>	<b>9,182,167</b>	<b>24.4</b>	<b>8,178,180</b>	<b>198,652</b>	<b>24</b>
<b>Bangkok Metropolis</b>	<b>3,188,446</b>	<b>78.8</b>	<b>2,963,943</b>	<b>57,906</b>	<b>20</b>
Samut Prakan	748,510	86.0	707,181	35,162	50
Nonthaburi	233,346	31.1	202,460	4,323	21
Pathum Thani	422,675	88.5	393,088	8,898	23
Phra Nakhon Si Ayutthaya	354,358	85.1	340,924	5,481	16
Ang Thong	13,012	7.6	9,618	240	25
Lop Buri	64,500	14.3	55,931	780	14
Sing Buri	17,618	12.6	15,084	378	25
Chai Nat	15,257	7.3	11,556	158	14
Saraburi	151,002	37.6	141,173	2,978	21
Chon Buri	535,128	79.6	502,295	14,255	28
Rayong	277,664	85.8	19,718	148	8
Chanthaburi	34,018	10.4	25,941	415	16
Trat	13,295	8.8	10,275	134	13
Chachoengsao	171,915	47.5	162,814	5,210	32
Prachin Buri	106,200	45.5	100,527	1,781	18
Nakhon Nayok	14,632	10.8	11,895	279	23
Sa Kaeo	15,860	3.6	11,319	229	20
Ratchaburi	90,867	18.3	79,275	1,800	23
Kanchanaburi	45,630	8.9	36,545	918	25
Suphan Buri	39,390	8.1	30,412	905	30
Nakhon Pathom	201,666	34.4	183,557	5,457	30
Samut Sakhon	338,366	94.2	324,939	14,229	44
Samut Songkhram	15,163	14.8	12,527	368	29
Phetchaburi	42,269	16.6	35,046	1,134	32
Prachuap Khiri Khan	52,861	19.4	45,668	850	19
<b>Central Region</b>	<b>4,015,202</b>	<b>41.8</b>	<b>3,469,768</b>	<b>106,510</b>	<b>31</b>
Chiang Mai	198,779	20.4	150,273	3,648	24
Lamphun	81,860	34.9	74,771	1,150	15
Lampang	52,414	11.9	42,672	954	22
Uttaradit	15,564	6.4	9,971	202	20
Phrae	18,031	6.8	11,591	217	19
Nan	12,257	4.3	6,485	68	10
Phayao	15,253	5.1	9,346	93	10
Chiang Rai	49,559	6.6	32,383	481	15
Mae Hong Son	5,050	3.5	2,186	7	3
Nakhon Sawan	50,743	8.9	38,729	1,077	28
Uthai Thani	8,867	5.1	5,708	118	21
Kamphaeng Phet	19,539	4.3	14,264	152	11
Tak	17,172	6.4	10,967	132	12
Sukhothai	15,706	4.6	10,312	187	18
Phitsanulok	50,750	11.7	36,346	488	13
Phichit	18,473	6.4	12,854	219	17
Phetchabun	25,301	4.1	18,314	400	22
<b>Northern Region</b>	<b>655,318</b>	<b>9.7</b>	<b>487,172</b>	<b>9,593</b>	<b>20</b>
Nakhon Ratchasima	214,315	15.1	186,158	4,194	23
Buri Ram	30,413	3.6	19,491	155	8
Surin	26,518	3.5	16,357	397	24
Si Sa Ket	18,823	2.2	9,350	79	8
Ubon Ratchathani	52,500	5.9	34,059	567	17
Yasothon	10,707	3.4	6,942	37	5
Chaiyaphum	26,055	4.1	18,172	154	8
Amnat Charoen	5,815	1.7	2,670	16	6
Nong Bua Lam Phu	8,123	1.8	4,197	32	8
Khon Kaen	108,757	12.2	87,354	1,007	12
Udon Thani	51,945	6.8	36,296	946	26
Loei	13,464	3.5	7,574	33	4
Nong Khai	18,748	3.4	10,511	191	18
Maha Sarakham	23,784	4.5	15,403	87	6
Roi Et	28,765	3.7	6,298	43	7
Kalasin	18,170	3.3	10,650	72	7
Sakon Nakhon	21,657	3.8	12,437	167	13
Nakhon Phanom	10,558	3.6	5,364	24	4
Mukdahan	9,756	4.3	6,253	52	8
<b>Northeastern Region</b>	<b>698,873</b>	<b>5.8</b>	<b>495,536</b>	<b>8,253</b>	<b>17</b>
Nakhon Si Thammarat	51,305	5.3	37,204	653	18
Krabi	33,866	14.3	28,407	350	12
Phang-nga	14,902	11.6	11,655	164	14
Phuket	119,662	69.3	107,749	2,159	20
Surat Thani	85,320	14.8	71,105	1,200	17
Ranong	8,587	8.1	264,994	6,844	26
Chumphon	25,375	9.1	20,059	368	18
Songkhla	170,030	22.5	142,156	2,649	19
Satun	9,886	6.0	6,809	145	21
Trang	36,054	9.3	28,584	658	23
Phatthalung	12,438	3.9	7,049	140	20
Pattani	22,197	7.5	15,304	331	22
Yala	19,391	7.6	12,438	644	52
Narathiwat	15,315	3.8	8,248	85	10
<b>Southern Region</b>	<b>624,328</b>	<b>12.4</b>	<b>761,761</b>	<b>16,390</b>	<b>22</b>

See Annex II for data sources

Table A1.4: Income

Location	Household income, 2007				Household income change, 2004-2007	Household expenditure		Household expenditure change, 2004-2007	Household debt, 2007		Poverty, 2007			GINI index
	Household income, 2004	Male headed	Female headed	Total households		Household expenditure 2004	Household expenditure 2007		Households with debt	Average Household debt	Poverty incidence	Number of poor	Poverty line	
	(baht/month)	(baht/month)	(baht/month)	(baht/month)	(%)	(baht/month)	(baht/month)	(%)	(%)	(baht)	(%)	(in 1,000)	(baht/person/month)	
	1	2	3	4	5	6	7	8	9	10	11	12	13	
<b>Kingdom</b>	<b>14,778</b>	<b>19,411</b>	<b>17,039</b>	<b>18,660</b>	<b>26.27</b>	<b>10,885</b>	<b>14,500</b>	<b>33.20</b>	<b>63.30</b>	<b>184,342</b>	<b>8.48</b>	<b>5,421.7</b>	<b>1,443</b>	<b>53.5</b>
<b>Bangkok Metropolis</b>	<b>29,696</b>	<b>40,972</b>	<b>35,637</b>	<b>39,020</b>	<b>31.40</b>	<b>19,841</b>	<b>25,615</b>	<b>29.10</b>	<b>42.74</b>	<b>363,613</b>	<b>1.14</b>	<b>64.4</b>	<b>2,065</b>	<b>46.9</b>
Samut Prakan	19,917	22,097	18,849	21,302	6.95	13,384	15,910	18.87	39.42	217,904	0.78	10.0	1,712	37.3
Nonthaburi	26,579	34,071	29,828	32,743	23.19	17,970	26,414	46.98	50.60	389,158	0.06	0.8	1,561	39.9
Pathum Thani	21,477	27,585	22,575	26,107	21.56	15,543	19,468	25.25	53.93	282,175	0.20	1.9	1,458	38.5
Phra Nakhon Si Ayutthaya	14,893	24,031	18,719	21,676	45.54	9,818	16,757	70.67	44.03	124,377	0.06	0.4	1,485	47.6
Ang Thong	12,811	18,718	16,463	17,704	38.20	9,052	13,432	48.38	59.23	178,010	7.24	19.8	1,480	45.7
Lop Buri	14,968	18,563	14,067	16,852	12.59	11,788	14,462	22.69	69.81	201,576	2.97	21.2	1,465	40.6
Sing Buri	14,611	20,945	20,058	20,558	40.70	11,355	14,988	31.99	61.13	124,677	1.48	3.4	1,452	54.2
Chai Nat	12,920	15,649	11,752	13,995	8.32	10,725	12,841	19.73	70.95	253,958	6.70	22.7	1,485	49.0
Saraburi	18,634	23,124	20,772	22,363	20.01	12,627	15,467	22.49	49.06	245,014	3.53	25.8	1,538	43.9
Chon Buri	22,240	23,344	20,159	22,260	0.09	14,310	21,048	47.08	59.98	232,262	0.09	1.0	1,623	38.9
Rayong	21,472	25,494	24,079	25,090	16.85	13,070	18,165	38.98	56.72	263,729	0.17	0.9	1,557	52.0
Chanthaburi	15,503	20,872	15,058	18,866	21.70	12,377	16,449	32.90	70.34	264,840	1.39	7.7	1,489	44.8
Trat	13,961	18,664	12,916	16,664	19.36	9,514	13,463	41.51	55.55	220,190	6.16	16.6	1,484	53.7
Chachoengsao	16,718	22,075	17,570	20,665	23.61	13,645	16,231	18.95	54.65	276,518	1.53	9.8	1,456	47.0
Prachin Buri	14,964	20,460	15,315	18,263	22.04	11,962	16,471	37.70	64.91	186,138	1.13	4.2	1,442	39.3
Nakhon Nayok	12,971	18,165	13,257	15,983	23.22	10,957	13,584	23.97	60.10	163,248	1.79	3.8	1,464	46.9
Sa Kaeo	10,753	14,536	12,086	13,593	26.41	6,575	9,975	51.72	74.11	136,660	19.85	146.5	1,436	58.9
Ratchaburi	19,425	18,484	16,320	17,576	-9.52	13,852	14,786	6.74	61.02	157,460	3.11	25.2	1,475	45.8
Kanchanaburi	11,944	16,695	12,793	15,326	28.31	9,577	12,457	30.08	63.14	144,312	10.71	95.1	1,465	47.5
Suphan Buri	15,496	15,748	14,379	15,111	-2.48	11,628	11,892	2.27	63.26	127,203	3.61	28.9	1,453	39.5
Nakhon Pathom	20,478	27,321	21,845	25,447	24.27	16,548	18,139	9.61	48.06	208,294	0.98	8.8	1,466	35.9
Samut Sakhon	15,281	19,135	17,659	18,735	22.60	11,546	14,076	21.91	45.32	153,519	0.42	2.4	1,564	37.6
Samut Songkhram	12,500	13,384	11,758	12,634	1.07	9,566	9,918	3.68	14.84	38,943	5.89	10.2	1,500	42.3
Phetchaburi	12,898	15,467	11,679	17,855	38.43	9,498	13,256	39.56	60.92	125,850	3.19	13.4	1,480	43.4
Prachuab Khiri Khan	13,752	18,914	15,988	17,932	30.39	10,495	15,977	52.23	58.88	238,673	3.54	15.7	1,497	47.3
<b>Central Region</b>	<b>17,275</b>	<b>21,939</b>	<b>18,002</b>	<b>20,547</b>	<b>18.94</b>	<b>12,485</b>	<b>16,309</b>	<b>30.64</b>	<b>56.28</b>	<b>210,785</b>	<b>3.08</b>	<b>496.2</b>	<b>1,515</b>	<b>45.9</b>
Chiang Mai	12,439	14,835	13,262	14,386	15.65	10,035	12,480	24.37	60.33	155,166	9.00	144.8	1,394	49.6
Lamphun	11,551	14,386	13,410	14,104	22.11	8,823	12,789	44.95	67.06	161,517	4.05	13.9	1,378	40.7
Lampang	10,539	14,014	12,630	13,530	28.38	7,594	11,360	49.58	66.54	175,433	14.56	111.8	1,365	50.9
Uttaradit	10,845	15,609	13,454	15,001	38.32	7,855	11,217	42.81	67.06	163,045	9.82	43.8	1,312	52.8
Phrae	10,982	13,956	14,348	14,044	27.88	7,867	11,491	46.06	69.40	169,282	10.54	43.3	1,337	45.8
Nan	10,454	10,884	13,480	11,407	9.12	9,146	11,578	26.60	76.76	166,134	20.21	97.3	1,272	55.1
Phayao	9,587	11,786	9,951	11,348	18.37	6,950	10,495	50.99	69.77	167,489	4.45	21.9	1,375	44.9
Chiang Rai	8,870	15,188	10,535	13,736	54.86	7,561	10,702	41.56	59.30	170,654	14.44	189.8	1,333	47.0
Mae Hong Son	8,564	7,783	5,843	7,245	-15.40	6,810	5,333	-21.70	42.61	149,138	65.16	203.7	1,275	57.6
Nakhon Sawan	9,877	15,936	13,716	15,141	53.30	7,028	10,699	52.24	69.30	209,472	12.32	113.6	1,318	54.7
Uthai Thani	9,631	12,473	11,320	12,036	24.97	7,052	9,727	37.93	73.83	164,396	12.16	35.2	1,325	46.3
Kamphaeng Phet	12,093	15,441	15,878	15,559	28.66	10,149	12,461	22.78	76.97	152,618	5.36	42.4	1,278	45.1
Tak	9,431	11,528	9,315	10,791	14.42	7,821	8,874	13.48	59.32	105,603	17.86	117.9	1,310	49.1
Sukhothai	11,267	13,318	11,541	12,720	12.89	7,495	8,695	16.00	70.93	120,405	19.27	111.8	1,313	48.9
Phitsanulok	12,612	13,723	12,761	13,364	5.96	9,867	11,276	14.28	66.09	167,691	8.90	66.9	1,324	45.5
Phichit	10,878	17,151	13,238	15,603	43.44	8,146	10,161	24.73	65.28	219,308	5.65	28.1	1,300	52.8
Phetchabun	9,363	12,341	13,888	12,914	37.92	6,906	10,946	58.50	73.90	167,227	12.32	131.8	1,267	43.9
<b>Northern Region</b>	<b>10,690</b>	<b>14,005</b>	<b>12,614</b>	<b>13,568</b>	<b>26.92</b>	<b>8,232</b>	<b>10,990</b>	<b>33.51</b>	<b>66.69</b>	<b>165,989</b>	<b>12.93</b>	<b>1,518.1</b>	<b>1,326</b>	<b>49.7</b>
Nakhon Ratchasima	11,237	15,519	11,611	14,177	26.17	8,212	11,305	37.67	75.66	143,195	9.97	254.3	1,321	50.2
Buri Ram	8,436	10,391	9,986	10,263	21.65	6,947	8,537	22.89	76.39	108,689	23.84	377.1	1,327	47.1
Surin	7,777	12,847	11,191	12,257	57.62	6,195	12,116	95.57	75.42	148,478	19.58	291.7	1,324	56.3
Si Sa Ket	8,365	12,245	7,891	10,782	28.90	6,533	9,070	38.83	83.02	119,287	28.65	431.6	1,280	50.8
Ubon Ratchathani	11,333	14,837	13,379	14,534	28.25	7,802	10,399	33.29	76.18	138,897	13.69	231.1	1,300	45.2
Yasothon	9,302	10,657	8,659	10,039	7.92	8,279	9,210	11.24	69.07	87,522	8.77	44.6	1,325	44.9
Chaiyaphum	8,981	11,858	9,535	11,253	25.30	6,455	9,344	44.76	78.71	116,315	16.86	181.7	1,318	47.2
Ammat Charoen	11,123	11,771	12,437	11,889	6.88	8,750	10,224	16.84	80.60	135,318	10.36	59.8	1,302	43.4
Nong Bua Lam Phu	8,198	12,878	12,723	12,824	56.44	6,354	11,717	84.41	79.80	147,139	7.07	53.5	1,316	56.1
Khon Kaen	12,734	15,822	12,456	15,065	18.30	9,454	11,247	18.96	71.14	167,842	7.04	110.6	1,344	46.1
Udon Thani	10,773	17,888	15,750	17,273	60.33	7,694	14,759	91.83	68.98	150,849	4.02	57.3	1,288	52.5
Loei	9,965	13,320	15,424	13,765	38.13	7,900	12,341	56.21	82.11	132,211	8.76	58.6	1,302	56.9
Nong Khai	11,218	13,282	11,877	12,885	14.86	9,048	12,131	34.08	66.39	141,566	3.37	34.2	1,324	40.2
Maha Sarakham	10,031	15,867	15,661	15,812	57.63	7,253	11,605	60.00	88.94	102,029	8.50	71.7	1,304	41.5
Roi Et	9,442	12,305	10,243	11,778	24.74	8,349	10,638	27.42	73.15	160,906	6.36	88.0	1,324	44.9
Kalasin	8,855	12,480	12,575	12,507	41.24	6,478	10,099	55.90	78.36	183,904	17.06	170.8	1,351	48.8
Sakon Nakhon	8,823	12,467	10,948	11,957	35.52	7,114	10,916	53.44	72.19	156,700	14.40	155.6	1,314	45.9
Nakhon Phanom	8,080	10,083	9,855	10,009	23.88	7,754	9,652	24.47	66.24	105,757	17.87	99.9	1,335	45.6
Mukdahan	9,176	13,944	10,979	13,406	46.10	7,823	11,818	51.07	80.74	143,279	14.32	58.1	1,309	48.9
<b>Northeastern Region</b>	<b>9,933</b>	<b>13,577</b>	<b>11,556</b>	<b>12,995</b>	<b>30.82</b>	<b>7,634</b>	<b>10,920</b>	<b>43.04</b>	<b>75.62</b>	<b>138,851</b>	<b>13.05</b>			

Table A1.5: Housing and Living Environment

Location	Housing, 2007				Living conditions, 2007						
	Households owning house and land	Permanent building material	Persons per room	Persons per sleeping room	Safe sanitation	Clean drinking water	Electricity in dwelling	Telephone in structure	Electric fan	Refrigerator	Cooking gas or electric stove
	(%)	(%)	(number)	(number)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
	1	2	3	4	5	6	7	8	9	10	11
<b>Kingdom</b>	<b>74.7</b>	<b>98.1</b>	<b>1.3</b>	<b>1.9</b>	<b>98.7</b>	<b>98.9</b>	<b>99.7</b>	<b>22.5</b>	<b>96.4</b>	<b>83.9</b>	<b>61.4</b>
<b>Bangkok Metropolitan</b>	<b>33.7</b>	<b>98.4</b>	<b>1.2</b>	<b>1.7</b>	<b>99.8</b>	<b>99.9</b>	<b>100.0</b>	<b>50.3</b>	<b>99.0</b>	<b>82.7</b>	<b>84.9</b>
Samut Prakan	21.0	97.9	1.5	1.9	100.0	100.0	99.8	24.3	99.3	73.5	82.3
Nonthaburi	43.4	98.1	1.0	1.6	99.8	100.0	100.0	57.6	99.7	90.7	86.0
Pathum Thani	40.0	99.2	1.3	1.8	100.0	99.2	100	39.3	98.9	88.8	81.3
Phra Nakhon Si Ayutthaya	66.0	99.5	1.7	2.1	100.0	99.9	100.0	32.3	99.4	88.3	83.6
Ang Thong	82.0	95.6	1.4	2.0	99.5	98	100.0	25.3	99.0	87.9	75.9
Lop Buri	72.4	96.2	1.8	2.2	98.3	95	100	26.6	99.7	88.1	75.9
Sing Buri	86.6	97.7	1.2	1.9	100.0	100.0	100.0	32.8	99.9	90.2	77.3
Chai Nat	81.9	98.1	1.3	2.0	98.7	99.8	99.1	22.2	97.5	86.9	56.6
Saraburi	59.2	98.6	1.2	1.8	100.0	99.0	99.9	30.8	98.1	84.9	75.4
Chon Buri	30.6	99.6	1.4	1.9	99.8	100.0	99.5	21.7	98.7	85.6	83.6
Rayong	54.7	97.1	1.6	2.0	99.8	100.0	99.8	25.6	99.0	88.4	92.8
Chanthaburi	74.3	98.3	1.1	1.8	99.1	99.6	99.7	27.1	97.0	85.6	77.7
Trat	66.4	100.0	1.7	2.1	100.0	97.9	99.0	18.6	96.4	85.2	85.2
Chachoengsao	73.0	99.6	1.5	1.9	100.0	100.0	100.0	22.8	99.7	93.3	89.3
Prachin Buri	86.0	99.1	1.3	1.9	98.8	99.5	100.0	13.0	98.9	92.3	81.2
Nakhon Nayok	77.8	97.8	2.1	2.3	98.6	100	99.9	26.6	100.0	95.1	84.1
Sa Kaeo	87.2	96.6	1.9	2.2	94.5	99	99	9.5	95.0	82.5	50.9
Ratchaburi	79.7	98.1	1.5	1.9	99.0	100	99.1	33.0	95.2	88.7	81.8
Kanchanaburi	72.0	91	1.5	2.0	95.5	93.4	99	16.6	95.6	83.0	63.9
Suphan Buri	85.7	96.7	1.4	2.2	99.2	99	99.4	20.7	97.5	90.4	73.2
Nakhon Pathom	60.1	99.1	1.4	1.8	99.9	98	100	43.4	99.5	89.5	90.1
Samut Sakhon	29.5	99.8	1.6	1.8	100.0	100.0	100.0	19.6	100.0	73.9	89.7
Samut Songkhram	74.6	95.5	1.6	1.8	98.7	100.0	99.8	39.1	98.7	92.3	77.9
Phetchaburi	91.5	98.2	1.6	2.2	98.7	99	99.5	37.7	97.9	90.2	85.1
Prachuap Khiri Khan	72.3	97.4	1.6	1.9	98.4	98.5	99.7	14.0	96.0	86.0	77.3
<b>Central Region</b>	<b>61.1</b>	<b>97.9</b>	<b>1.4</b>	<b>1.9</b>	<b>99.1</b>	<b>98.9</b>	<b>99.7</b>	<b>28.4</b>	<b>98.3</b>	<b>86.4</b>	<b>79.4</b>
Chiang Mai	82.4	94.9	0.8	1.5	98.2	98.3	99	32.0	88.8	83.5	41.3
Lamphun	88.4	99.3	0.9	1.4	98.9	97.9	99.6	31.9	92.8	89.7	51.1
Lampang	88.8	98.1	1.1	1.5	99.7	96.4	99.8	31.1	95.8	91.8	42.6
Uttaradit	89.6	99.2	1.3	2.1	99.3	100.0	100.0	18.7	96.0	92.3	50.9
Phrae	94.8	99.5	1.4	1.8	99.1	97.8	100.0	28.1	98.4	91.4	48.3
Nan	67.6	94.8	0.9	1.5	99.2	98.1	99.5	15.6	81.9	77.5	32.3
Phayao	92.9	99.5	0.9	1.6	99.7	96.9	100	15.9	95.3	90.9	44.8
Chiang Rai	80.9	95.7	1.1	1.4	99.1	97.7	100	21.9	91.7	88.9	41.5
Mae Hong Son	66.8	80.3	1.1	2.1	94.2	51.3	91.4	8.9	47.8	41.5	28.0
Nakhon Sawan	83.5	98.4	1.4	2.3	98.0	98.7	99.2	17.5	99.0	89.9	71.4
Uthai Thani	85.2	94.2	1.3	2.1	99.6	100	98.9	16.1	96.0	87.9	58.6
Kamphaeng Phet	79.2	97	1.3	2.1	99.4	99	99.6	11.2	98.7	83.7	55.9
Tak	79.4	94.2	1.1	1.9	97.4	98	98.3	16.7	90.2	80.9	47.7
Sukhothai	92.8	99.4	1.7	2.4	99.3	99.6	99	16.3	96.8	83.3	56.0
Phitsanulok	78.5	97.0	1.5	2.0	99.4	97.0	98.8	17.3	96.1	88.0	57.9
Phichit	89.5	97.1	1.5	2.3	99.9	100.0	99.5	23.7	98.9	87.5	59.9
Phetchabun	83.0	92.7	1.3	2.1	98.4	100.0	99.5	15.1	93.9	81.4	42.0
<b>Northern Region</b>	<b>83.6</b>	<b>96.3</b>	<b>1.1</b>	<b>1.8</b>	<b>98.8</b>	<b>97.4</b>	<b>99</b>	<b>21.0</b>	<b>93.1</b>	<b>85.6</b>	<b>48.9</b>
Nakhon Ratchasima	87.5	99.3	1.2	2.1	99.6	99.7	100	13.1	98.1	87.6	70.7
Buri Ram	95.0	98.8	1.5	2.3	95.3	100	99.3	8.0	94.2	71.7	35.3
Surin	87.2	99.1	1.7	2.3	98.1	100.0	100.0	11.8	94.3	71.1	39.8
Si Sa Ket	97.4	97.8	1.6	2.2	95.2	100	100	6.5	96.8	63.9	20.2
Ubon Ratchathani	94.2	99.7	1.2	2.0	99.4	100	100.0	12.1	96.1	77.9	25.2
Yasothon	95.0	99.5	1.6	2.0	100.0	99.5	100.0	10.5	97.4	81.7	25.2
Chaiyaphum	92.6	98.2	1.2	1.8	99.5	99.2	100.0	15.9	97.6	83.6	42.8
Amnat Charoen	96.9	98.9	1.6	2.2	100.0	100.0	99.3	8.0	92.6	80.2	17.7
Nong Bua Lam Phu	94.5	98.0	1.8	2.2	100.0	97.4	100.0	5.2	99.2	87.7	31.2
Khon Kaen	85.5	98.4	1.0	1.6	99.1	98.2	99.7	14.0	98.6	85.0	38.5
Udon Thani	93.4	100.0	1.6	2.2	98.0	98.1	99.4	13.3	97.3	86.7	38.9
Loei	90.2	98.5	1.1	1.7	100.0	99.0	100.0	10.0	93.8	87.8	25.5
Nong Khai	95.8	99.7	1.1	1.9	99.7	99.1	100	13.4	98.2	87.3	35.7
Maha Sarakham	92.7	98.9	1.1	2.0	99.5	99.5	99.5	8.9	97.7	84.8	19.1
Roi Et	95.9	99.0	1.3	2.0	99.6	100.0	100.0	4.4	97.4	82.1	21.2
Kalasin	95.4	99.0	1.2	2.0	99.4	99.8	100	9.4	98.3	82.7	32.2
Sakon Nakhon	93.0	99.6	1.7	2.3	98.9	100.0	100.0	10.6	96.0	81.5	29.7
Nakhon Phanom	96.2	99.9	1.3	1.9	98.3	99.2	100.0	10.9	93.4	81.1	23.5
Mukdahan	88.7	98.4	1.2	1.8	99.8	93.2	98.8	13.5	92.0	81.7	18.4
<b>Northeastern Region</b>	<b>92.4</b>	<b>99.0</b>	<b>1.3</b>	<b>2.0</b>	<b>98.7</b>	<b>99.3</b>	<b>99.8</b>	<b>10.8</b>	<b>96.6</b>	<b>81.0</b>	<b>35.4</b>
Nakhon Si Thammarat	86.1	98.4	1.0	1.9	97.1	98.6	99	15.7	95.2	87.9	90.1
Krabi	77.9	99.1	1.3	2.1	97.5	100.0	99.3	12.4	97.0	87.4	92.0
Phang-nga	73.1	97.8	0.9	1.8	94.2	97.4	100.0	25.3	95.8	90.6	95.6
Phuket	41.0	97.7	1.4	1.9	99.5	99.8	100.0	25.9	99.3	83.5	88.6
Surat Thani	67.7	97.8	1.1	2.1	98.6	99.0	99.6	19.7	96.8	87.2	88.4
Ranong	65.0	98.8	1.2	2.0	100.0	95.9	98.2	25.5	95.8	83.4	86.1
Chumphon	83.5	99.2	1.3	2.0	98.0	98	99.3	15.8	95.8	85.6	83.1
Songkhla	70.0	99.3	1.1	1.7	99.4	100	99.8	27.3	97.1	88.3	93.0
Satun	77.9	96.2	1.1	2.4	95.6	98	99.4	13.2	96.0	87.2	95.4
Trang	78.2	99.0	1.1	1.8	97.3	99.6	99.5	21.7	93.0	87.3	88.4
Phatthalung	93.0	98.5	0.8	1.6	98.7	100.0	99.6	14.3	95.0	87.9	87.9
Pattani	78.4	99.8	1.5	2.6	90.4	98.5	100.0	16.1	88.1	64.4	87.2
Yala	80.5	98.0	1.5	2.5	93.6	99.3	100.0	20.1	97.2	85.5	91.0
Narathiwat	85.9	100.0	1.5	2.5	93.6	100	100.0	15.1	92.7	71.1	89.3
<b>Southern Region</b>	<b>77.3</b>	<b>98.7</b>	<b>1.1</b>	<b>2.0</b>	<b>97.0</b>	<b>99.1</b>	<b>99.6</b>	<b>19.1</b>	<b>95.3</b>	<b>84.7</b>	<b>89.8</b>

See Annex II for data sources

Table A1.5: Housing and Living Environment (continued)

Location	Living environment, 2007			
	Population affected by flood		Population affected by drought	
	(number)	(%)	(number)	(%)
	12	13	14	15
<b>Kingdom</b>	<b>2,326,179</b>	<b>3.7</b>	<b>12,793,787</b>	<b>20.3</b>
<b>Bangkok Metropolis</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>
Samut Prakan	0	0.0	0	0.0
Nonthaburi	0	0.0	0	0.0
Pathum Thani	0	0.0	0	0.0
Phra Nakhon Si Ayutthaya	73,974	9.7	5,351	6.0
Ang Thong	15,043	5.3	18,291	6.4
Lop Buri	9,250	1.2	145,368	19.4
Sing Buri	51,813	24.0	811	0.4
Chai Nat	41,442	12.3	19,858	5.9
Saraburi	0	0.0	17,964	2.9
Chon Buri	1,061	0.1	14,378	1.2
Rayong	120	0.0	61,616	10.6
Chanthaburi	910	0.2	81,750	16.2
Trat	980	0.4	8,323	3.8
Chachoengsao	0	0.0	203,710	30.9
Prachin Buri	0	0.0	60,045	13.2
Nakhon Nayok	0	0.0	11,222	4.5
Sa Kaeo	2,500	0.5	349,812	64.9
Ratchaburi	0	0.0	329,749	39.7
Kanchanaburi	1,135	0.1	54,632	6.5
Suphan Buri	4,306	0.5	257,291	30.5
Nakhon Pathom	3,890	0.5	0	0.0
Samut Sakhon	0	0.0	0	0.0
Samut Songkhram	0	0.0	0	0.0
Phetchaburi	0	0.0	15,717	3.4
Prachuap Khiri Khan	8,410	1.7	0	0.0
<b>Central Region</b>	<b>214,834</b>	<b>1.4</b>	<b>1,695,888</b>	<b>11.0</b>
Chiang Mai	9,642	0.6	98,564	5.9
Lamphun	12,415	3.1	54,166	13.4
Lampang	15,855	2.1	281,069	36.5
Uttaradit	9,677	2.1	84,900	18.2
Phrae	5,476	1.2	159,417	34.2
Nan	2,840	0.6	108,346	22.7
Phayao	5,083	1.0	130,831	26.9
Chiang Rai	32,885	2.7	321,746	26.3
Mae Hong Son	3,225	1.3	78,691	30.9
Nakhon Sawan	86,095	8.0	120,232	11.2
Uthai Thani	76,279	23.3	19,174	5.9
Kamphaeng Phet	54,183	7.5	216,925	29.9
Tak	58,383	11.0	284,834	53.6
Sukhothai	5,403	0.9	216,750	35.8
Phitsanulok	59,816	7.1	49,432	5.9
Phichit	59,390	10.7	56,075	10.1
Phetchabun	32,639	3.3	130,542	13.1
<b>Northern Region</b>	<b>529,286</b>	<b>4.5</b>	<b>2,411,694</b>	<b>20.3</b>
Nakhon Ratchasima	152,828	6.0	560,847	22.0
Buri Ram	0	0.0	979,420	63.8
Surin	0	0.0	397,350	28.9
Si Sa Ket	76,035	5.3	138,623	9.6
Ubon Ratchathani	104,685	5.9	846,380	47.4
Yasothon	60,280	11.2	308,552	57.2
Chaiyaphum	21,258	1.9	262,715	23.5
Amnat Charoen	1,450	0.4	104,106	28.2
Nong Bua Lam Phu	6,376	1.3	192,570	38.7
Khon Kaen 1	58,414	9.0	880,158	50.2
Udon Thani	0	0.0	779,609	50.9
Loei	40,093	6.5	233,047	37.9
Nong Khai	31,989	3.5	398,410	44.1
Maha Sarakham	9,465	1.0	655,095	70.0
Roi Et	291,077	22.2	306,856	23.4
Kalasin	396,167	40.5	271,762	27.8
Sakon Nakhon	11,027	1.0	490,011	44.0
Nakhon Phanom	0	0.0	301,571	43.3
Mukdahan	20,927	6.2	40,012	11.9
<b>Northeastern Region</b>	<b>1,382,071</b>	<b>6.5</b>	<b>8,147,094</b>	<b>38.1</b>
Nakhon Si Thammarat	2,464	0.2	154,780	10.3
Krabi	0	0.0	65,939	16.1
Phang-nga	14,281	5.8	0	0.0
Phuket	0	0.0	1,974	0.6
Surat Thani	24,693	2.5	84,370	8.7
Ranong	0	0.0	43,002	23.8
Chumphon	19,048	4.0	69,213	14.4
Songkhla	3,900	0.3	23,650	1.8
Satun	0	0.0	12,509	4.4
Trang	0	0.0	46,737	7.7
Phatthalung	0	0.0	9,297	1.8
Pattani	56,385	8.8	0	0.0
Yala	8,564	1.8	4,287	0.9
Narathiwat	70,653	9.9	23,353	3.3
<b>Southern Region</b>	<b>199,988</b>	<b>2.3</b>	<b>539,111</b>	<b>6.2</b>

See Annex II for data sources

Table A1.6: Family and Community Life

Location	Family life 2007									
	Female-headed households, 2007		Elderly-headed households, 2007				Single-headed households, 2007			
	(number)	(%)	Male	Female	Total	(% hholds)	Male	Female	Total	(% total hholds)
	1	2	3	4	5	6	7	8	9	10
<b>Kingdom</b>	<b>5,651,705</b>	<b>31.0</b>	<b>2,571,891</b>	<b>1,615,385</b>	<b>4,187,276</b>	<b>23.0</b>	<b>778,942</b>	<b>2,514,465</b>	<b>3,293,406</b>	<b>18.1</b>
<b>Bangkok Metropolis</b>	<b>707,351</b>	<b>34.1</b>	<b>199,325</b>	<b>152,254</b>	<b>351,579</b>	<b>17.0</b>	<b>65,801</b>	<b>241,731</b>	<b>307,532</b>	<b>14.8</b>
Samut Prakan	138,294	30.5	23,793	19,603	43,397	9.6	15,432	40,498	55,930	12.3
Nonthaburi	135,573	35.4	30,942	23,467	54,409	14.2	8,096	45,578	53,674	14.0
Pathum Thani	64,492	31.0	16,839	11,895	28,735	13.8	6,850	20,347	27,196	13.1
Phra Nakhon Si Ayutthaya	104,259	45.9	29,631	31,155	60,785	26.8	11,928	34,131	46,059	20.3
Ang Thong	35,987	45.5	12,260	10,932	23,192	29.3	3,049	16,286	19,335	24.4
Lop Buri	73,901	34.2	36,764	24,966	61,730	28.5	11,113	36,314	47,427	21.9
Sing Buri	26,659	37.8	7,582	4,987	12,570	17.8	3,364	8,348	11,712	16.6
Chai Nat	39,181	40.5	14,663	12,110	26,773	27.7	3,788	12,162	15,950	16.5
Saraburi	80,315	38.0	28,227	25,062	53,290	25.2	9,303	34,495	43,798	20.7
Chon Buri	135,483	37.9	29,670	23,960	53,630	15.0	13,359	52,224	65,584	18.4
Rayong	41,194	26.2	15,946	11,309	27,255	17.4	7,859	18,061	25,919	16.5
Chanthaburi	49,875	33.0	19,527	14,891	34,418	22.8	7,880	21,087	28,968	19.2
Trat	23,199	29.0	10,406	5,101	15,506	19.4	4,213	9,108	13,321	16.7
Chachoengsao	58,558	30.8	25,392	16,448	41,840	22.0	12,862	28,880	41,742	21.9
Prachin Buri	36,082	33.5	16,916	10,977	27,892	25.9	5,237	14,214	19,451	18.1
Nakhon Nayok	23,761	34.9	11,745	7,057	18,802	27.6	3,184	9,364	12,547	18.4
Sa Kaeo	73,866	32.6	29,793	20,529	50,322	22.2	8,320	28,627	36,946	16.3
Ratchaburi	92,420	40.5	37,392	26,086	63,478	27.8	13,867	40,112	53,979	23.7
Kanchanaburi	87,466	32.9	41,498	26,011	67,508	25.4	15,345	36,962	52,308	19.7
Suphan Buri	83,039	39.9	35,628	24,251	59,879	28.8	13,667	35,345	49,012	23.5
Nakhon Pathom	77,081	29.6	32,240	22,486	54,726	21.0	12,998	34,035	47,033	18.1
Samut Sakhon	56,903	30.6	13,702	7,398	21,100	11.3	9,041	17,546	26,587	14.3
Samut Songkhram	18,465	40.2	6,982	4,567	11,549	25.1	2,736	6,857	9,593	20.9
Phetchaburi	44,225	39.0	17,504	15,277	32,781	28.9	4,919	20,155	25,074	22.1
Prachuap Khiri Khan	47,587	34.2	20,952	16,332	37,284	26.8	8,249	23,683	31,932	23.0
<b>Central Region</b>	<b>1,647,864</b>	<b>34.8</b>	<b>565,995</b>	<b>416,857</b>	<b>982,851</b>	<b>20.8</b>	<b>216,657</b>	<b>644,419</b>	<b>861,076</b>	<b>18.2</b>
Chiang Mai	127,203	26.9	85,175	46,567	131,742	27.9	24,709	73,602	98,312	20.8
Lamphun	29,346	25.5	23,946	12,840	36,787	32.0	10,130	20,420	30,549	26.5
Lampang	70,135	31.5	42,303	24,540	66,843	30.0	15,533	36,907	52,441	23.5
Uttaradit	36,653	26.7	16,960	9,064	26,024	18.9	4,659	15,905	20,565	15.0
Phrae	29,450	21.7	32,595	10,462	43,057	31.7	9,085	17,941	27,026	19.9
Nan	32,572	22.5	24,967	8,897	33,864	23.4	6,506	16,918	23,425	16.2
Phayao	35,667	25.0	26,361	13,441	39,802	27.8	11,704	21,343	33,047	23.1
Chiang Rai	100,206	26.4	60,954	28,524	89,478	23.6	22,634	55,295	77,929	20.5
Mae Hong Son	11,951	17.8	10,880	3,130	14,010	20.9	5,120	5,094	10,214	15.2
Nakhon Sawan	106,996	36.6	42,008	25,526	67,533	23.1	12,248	41,816	54,064	18.5
Uthai Thani	33,514	38.0	15,072	11,217	26,289	29.8	4,284	14,107	18,391	20.8
Kamphaeng Phet	61,228	27.8	36,083	19,365	55,447	25.2	10,584	33,592	44,177	20.0
Tak	36,923	28.0	17,961	8,442	26,403	20.0	4,446	15,405	19,851	15.1
Sukhothai	69,349	39.3	25,119	20,811	45,930	26.1	8,166	27,750	35,916	20.4
Phitsanulok	74,299	31.5	43,019	16,858	59,877	25.4	11,550	29,670	41,221	17.5
Phichit	51,453	34.5	24,768	19,522	44,289	29.7	6,189	21,547	27,737	18.6
Phetchabun	80,942	27.7	45,503	20,220	65,723	22.5	15,166	35,937	51,102	17.5
<b>Northern Region</b>	<b>987,888</b>	<b>29.0</b>	<b>573,673</b>	<b>299,426</b>	<b>873,099</b>	<b>25.6</b>	<b>182,716</b>	<b>483,249</b>	<b>665,965</b>	<b>19.6</b>
Nakhon Ratchasima	273,909	37.3	113,045	88,584	201,629	27.5	28,624	130,475	159,099	21.7
Buri Ram	139,378	33.2	59,429	33,909	93,338	22.2	9,631	55,600	65,231	15.5
Surin	123,171	30.2	65,988	42,244	108,232	26.5	16,044	61,619	77,663	19.0
Si Sa Ket	113,630	30.9	69,057	39,539	108,596	29.6	19,791	56,772	76,563	20.8
Ubon Ratchathani	96,775	21.6	62,707	22,440	85,147	19.0	18,879	45,116	63,995	14.3
Yasothon	49,869	35.9	24,302	19,550	43,852	31.6	7,997	28,108	36,105	26.0
Chaiyaphum	77,445	25.7	55,227	31,986	87,213	28.9	12,495	41,808	54,303	18.0
Amnat Charoen	28,071	19.1	22,689	9,551	32,240	21.9	4,758	15,946	20,703	14.1
Nong Bua Lam Phu	49,928	27.1	31,185	8,468	39,654	21.5	6,052	18,375	24,426	13.3
Khon Kaen	100,549	23.7	70,470	37,374	107,845	25.4	16,974	63,689	80,664	19.0
Udon Thani	96,810	27.6	55,098	23,609	78,707	22.4	16,763	38,614	55,378	15.8
Loei	34,876	21.5	31,656	13,513	45,169	27.8	4,723	19,409	24,132	14.9
Nong Khai	65,997	26.8	42,681	24,144	66,825	27.2	10,500	35,592	46,092	18.7
Maha Sarakham	54,160	24.9	35,214	22,966	58,181	26.8	9,256	31,385	40,641	18.7
Roi Et	115,656	32.4	53,375	47,451	100,826	28.2	18,584	68,903	87,488	24.5
Kalasin	73,461	30.1	31,951	18,715	50,665	20.7	9,028	26,639	35,667	14.6
Sakon Nakhon	73,918	27.8	38,809	23,954	62,764	23.6	8,982	38,722	47,704	17.9
Nakhon Phanom	48,147	31.6	21,441	17,218	38,659	25.3	5,424	23,735	29,158	19.1
Mukdahan	18,278	19.2	11,903	2,927	14,831	15.6	2,323	7,245	9,568	10.0
<b>Northeastern Region</b>	<b>1,634,030</b>	<b>28.8</b>	<b>896,230</b>	<b>528,143</b>	<b>1,424,373</b>	<b>25.1</b>	<b>226,827</b>	<b>807,753</b>	<b>1,034,580</b>	<b>18.3</b>
Nakhon Si Thammarat	122,821	30.3	70,215	44,072	114,287	28.2	16,144	61,022	77,166	19.1
Krabi	23,583	21.4	14,833	5,965	20,798	18.9	4,219	11,368	15,587	14.2
Phang-nga	13,517	20.8	9,872	4,658	14,530	22.3	3,027	6,593	9,619	14.8
Phuket	30,280	32.2	5,265	6,527	11,792	12.5	2,051	11,849	13,900	14.8
Surat Thani	72,802	26.9	35,603	20,999	56,602	20.9	8,688	37,416	46,104	17.0
Ranong	13,456	24.6	6,548	3,204	9,752	17.9	1,575	6,431	8,006	14.7
Chumphon	46,659	33.9	19,367	15,486	34,853	25.3	6,510	21,924	28,434	20.6
Songkhla	125,737	33.7	51,545	36,688	88,233	23.7	14,666	59,932	74,598	20.0
Satun	16,031	22.0	10,869	5,067	15,936	21.8	3,304	8,824	12,128	16.6
Trang	47,197	27.4	22,805	18,261	41,066	23.9	5,659	23,358	29,017	16.9
Phatthalung	39,753	28.5	22,209	15,682	37,892	27.1	4,795	20,291	25,086	18.0
Pattani	42,852	31.0	21,688	15,779	37,467	27.1	4,110	20,778	24,888	18.0
Yala	31,817	23.8	17,631	8,759	26,390	19.8	5,811	16,984	22,795	17.1
Narathiwat	48,066	24.4	28,217	17,558	45,775	23.3	6,382	30,544	36,926	18.8
<b>Southern Region</b>	<b>674,572</b>	<b>28.5</b>	<b>336,668</b>	<b>218,705</b>	<b>555,374</b>	<b>23.5</b>	<b>86,941</b>	<b>337,312</b>	<b>424,254</b>	<b>17.9</b>

See Annex II for data sources

Table A1.6: Family and Community Life (continued)

Location	Family life 2007						Safety, 2007	
	Elderly living alone, 2007		Children in distress 2007	Working children aged 15-17, 2007			Violent crimes reported	Drug-related crimes arrested
	(number)	(% total elderly)	(per 100,000 pop)	Total	Working	(% working)	(per 100,000 pop)	(per 100,000 pop)
	11	12	13	14	15	16	17	18
<b>Kingdom</b>	<b>545,862</b>	<b>7.8</b>	<b>51.5</b>	<b>3,142,871</b>	<b>510,187</b>	<b>16.2</b>	<b>13</b>	<b>239</b>
<b>Bangkok Metropolis</b>	<b>40,171</b>	<b>6.2</b>	<b>n.a</b>	<b>238,573</b>	<b>36,950</b>	<b>15.5</b>	<b>22</b>	<b>684</b>
Samut Prakan	3,687	4.7	1.6	47,567	9,921	20.9	14	609
Nonthaburi	5,245	5.0	0.5	43,096	5,396	12.5	19	670
Pathum Thani	3,226	6.5	49.5	29,718	5,365	18.1	19	330
Phra Nakhon Si Ayutthaya	8,548	8.7	7.6	33,014	2,232	6.8	12	324
Ang Thong	3,722	9.6	37.6	12,810	3,158	24.6	14	321
Lop Buri	10,649	10.8	24.7	33,987	4,186	12.3	11	164
Sing Buri	2,341	7.1	8.3	10,916	1,974	18.1	9	173
Chai Nat	6,073	12.4	21.7	16,094	4,040	25.1	9	104
Saraburi	7,209	8.1	19.8	31,139	7,299	23.4	13	251
Chon Buri	5,338	5.6	3.3	49,617	9,543	19.2	24	972
Rayong	5,629	12.6	17.8	23,553	2,857	12.1	17	319
Chanthaburi	4,718	8.5	78.8	24,675	5,181	21.0	9	167
Trat	1,418	5.5	24.9	11,989	2,554	21.3	10	283
Chachoengsao	5,369	7.3	18.5	31,464	3,916	12.4	14	288
Prachin Buri	4,077	8.9	58.0	18,554	3,345	18.0	13	322
Nakhon Nayok	3,258	10.8	11.7	10,991	1,726	15.7	16	252
Sa Kaeo	7,946	10.3	37.3	38,024	8,516	22.4	8	193
Ratchaburi	10,257	9.8	8.4	41,401	8,876	21.4	14	353
Kanchanaburi	8,537	8.7	23.3	41,667	12,068	29.0	11	389
Suphan Buri	7,969	7.6	15.8	40,440	9,769	24.2	10	349
Nakhon Pathom	3,946	4.3	19.3	43,122	6,842	15.9	17	668
Samut Sakhon	1,955	5.6	1.9	22,247	7,715	34.7	23	465
Samut Songkhram	1,933	8.4	1.0	8,678	1,260	14.5	11	224
Phetchaburi	3,788	7.0	14.9	21,287	5,237	24.6	12	268
Prachuap Khiri Khan	6,765	12.3	36.0	22,637	4,697	20.8	16	259
<b>Central Region</b>	<b>133,603</b>	<b>8.1</b>	<b>19.8</b>	<b>708,687</b>	<b>137,672</b>	<b>19.4</b>	<b>15</b>	<b>413</b>
Chiang Mai	17,003	8.2	177.3	78,908	10,247	13.0	11	210
Lampang	5,578	10.5	116.0	16,018	685	4.3	5	104
Lampang	9,755	8.9	96.8	33,716	285	0.8	5	86
Uttaradit	3,639	5.8	61.7	20,137	1,431	7.1	8	107
Phrae	5,923	9.3	29.6	19,303	2,540	13.2	5	160
Nan	3,065	5.6	82.1	24,009	5,465	22.8	5	93
Phayao	7,983	13.0	199.8	24,174	1,745	7.2	4	97
Chiang Rai	17,524	11.7	192.0	66,473	7,047	10.6	5	201
Mae Hong Son	3,242	16.1	308.1	16,465	7,061	42.9	5	110
Nakhon Sawan	14,337	10.6	16.7	43,765	8,951	20.5	9	142
Uthai Thani	4,501	11.0	73.7	14,492	2,731	18.8	7	71
Kamphaeng Phet	5,927	6.3	43.9	39,431	8,120	20.6	7	94
Tak	3,829	9.1	58.8	27,455	4,410	16.1	9	161
Sukhothai	10,591	12.6	43.1	24,576	3,454	14.1	6	78
Phitsanulok	11,166	12.5	44.2	39,582	2,749	6.9	13	136
Phichit	6,017	7.8	17.1	22,587	2,902	12.8	5	73
Phetchabun	9,662	8.0	44.9	53,467	7,131	13.3	9	58
<b>Northern Region</b>	<b>139,742</b>	<b>9.5</b>	<b>95.4</b>	<b>564,558</b>	<b>76,955</b>	<b>13.6</b>	<b>8</b>	<b>129</b>
Nakhon Ratchasima	26,865	8.3	58.4	136,575	17,953	13.1	4	81
Buri Ram	10,501	6.0	78.1	84,948	9,212	10.8	3	57
Surin	16,278	9.0	121.8	81,233	7,904	9.7	3	49
Si Sa Ket	10,294	6.1	106.3	79,256	11,122	14.0	3	49
Ubon Ratchathani	14,712	8.0	70.1	90,428	17,425	19.3	5	152
Yasothon	3,271	4.9	58.6	26,135	5,147	19.7	2	134
Chaiyaphum	8,808	6.8	54.9	54,408	5,587	10.3	4	77
Amnat Charoen	4,702	7.5	50.7	30,426	4,749	15.6	5	216
Nong Bua Lam Phu	2,438	4.5	49.6	41,775	7,348	17.6	4	43
Khon Kaen	7,528	3.9	48.2	84,264	15,368	18.2	5	92
Udon Thani	6,408	5.5	23.3	76,040	7,883	10.4	4	67
Loei	2,715	3.5	28.1	32,262	6,104	18.9	3	90
Nong Khai	8,255	8.5	87.3	55,281	9,256	16.7	4	90
Maha Sarakham	6,857	7.5	47.6	41,966	4,239	10.1	3	88
Roi Et	16,615	11.0	56.5	68,704	11,271	16.4	4	77
Kalasin	5,461	5.7	60.6	53,505	9,062	16.9	4	112
Sakon Nakhon	5,106	5.5	40.2	62,613	5,243	8.4	4	95
Nakhon Phanom	5,980	10.3	111.3	31,168	2,289	7.3	4	116
Mukdahan	2,366	6.1	49.7	21,620	4,805	22.2	5	229
<b>Northeastern Region</b>	<b>165,160</b>	<b>7.0</b>	<b>64.7</b>	<b>1,152,607</b>	<b>161,967</b>	<b>14.1</b>	<b>4</b>	<b>90</b>
Nakhon Si Thammarat	10,762	5.6	45.8	91,407	17,034	18.6	18	124
Krabi	2,191	6.3	44.6	23,483	6,378	27.2	23	159
Phang-nga	1,415	5.9	10.5	11,936	1,312	11.0	20	164
Phuket	512	2.3	8.2	13,299	1,566	11.8	23	388
Surat Thani	9,364	9.6	14.9	50,718	12,188	24.0	32	249
Ranong	1,509	9.5	77.4	9,556	2,512	26.3	12	331
Chumphon	4,913	9.2	42.6	23,407	3,690	15.8	17	167
Songkhla	9,385	6.9	10.8	70,429	13,371	19.0	33	217
Satun	1,451	5.8	75.9	16,529	3,823	23.1	20	196
Trang	7,372	11.1	47.8	35,198	6,882	19.6	24	102
Phatthalung	6,278	10.5	39.8	27,630	4,458	16.1	28	118
Pattani	3,462	6.3	99.6	30,777	8,747	28.4	63	219
Yala	3,274	7.6	65.4	26,915	3,116	11.6	64	437
Narathiwat	5,298	7.8	129.4	47,163	11,566	24.5	57	220
<b>Southern Region</b>	<b>67,186</b>	<b>7.5</b>	<b>47.7</b>	<b>478,447</b>	<b>96,643</b>	<b>20.2</b>	<b>32</b>	<b>204</b>

See Annex II for data sources

Table A1.7: Transport and Communication

Location	Transportation, 2007				Communication, 2007				
	Villages	Villages with all-season main road	Vehicle registration, 2007		Land-traffic accidents reported	Households with TV 2007	Households with radio	Population with mobile phone	Population with internet access
			(number)	(per 1,000 pop)					
	1	2	3	4	5	6	7	8	9
<b>Kingdom</b>	<b>69,763</b>	<b>50.7</b>	<b>24,544,776</b>	<b>389</b>	<b>160</b>	<b>95.3</b>	<b>60.3</b>	<b>47.2</b>	<b>15.5</b>
<b>Bangkok Metropolis</b>	<b>n.a</b>	<b>n.a</b>	<b>5,543,634</b>	<b>970</b>	<b>816</b>	<b>96.4</b>	<b>81.7</b>	<b>68.4</b>	<b>29.9</b>
Samut Prakan	323	78.6	85,601	76	263	95.1	52.0	67.2	19.8
Nonthaburi	303	84.8	134,823	132	158	98.4	79.1	72.3	29.7
Pathum Thani	430	83.0	95,304	106	125	97.9	68.7	67.5	19.9
Phra Nakhon Si Ayutthaya	1,141	69.3	263,794	347	220	96.5	37.1	47.6	12.9
Ang Thong	432	76.6	113,514	399	95	95.3	66.1	49.4	11.3
Lop Buri	1,067	51.5	288,084	384	83	96.5	58.7	51.6	15.4
Sing Buri	305	85.6	111,289	516	95	96.6	67.2	51.0	14.7
Chai Nat	504	49.4	125,639	373	68	96.3	55.8	45.1	12.5
Saraburi	885	61.1	279,665	454	111	94.3	42.3	52.9	15.5
Chon Buri	545	58.7	822,964	667	300	95.7	52.0	63.0	15.3
Rayong	405	64.2	397,462	681	74	96.3	73.2	57.6	16.9
Chanthaburi	666	49.2	253,232	502	54	94.7	52.4	51.3	15.8
Trat	242	61.6	91,596	415	82	95.8	34.8	47.9	10.2
Chachoengsao	846	54.7	235,501	357	154	98.7	51.9	52.9	11.9
Prachin Buri	695	46.8	170,946	376	50	94.9	47.5	52.1	11.9
Nakhon Nayok	404	69.1	93,166	375	41	96.6	79.3	45.5	8.4
Sa Kaeo	727	42.5	132,758	246	78	93.5	33.1	44.0	11.0
Ratchaburi	803	64.6	363,321	437	88	93.4	54.9	48.5	14.9
Kanchanaburi	910	43.8	276,872	331	71	93.6	55.3	46.8	12.8
Suphan Buri	966	53.0	345,719	410	77	95.3	77.1	45.2	9.0
Nakhon Pathom	867	81.2	309,709	373	93	97.1	64.2	58.1	18.5
Samut Sakhon	243	80.7	149,409	318	53	92.5	37.8	56.7	8.6
Samut Songkhram	270	74.4	53,526	276	36	95.4	39.5	50.0	15.7
Phetchaburi	586	68.1	225,167	494	234	94.0	61.8	43.0	13.8
Prachuap Khiri Khan	410	37.6	226,824	459	67	96.6	39.0	51.4	13.9
<b>Central Region</b>	<b>14,975</b>	<b>60.8</b>	<b>5,645,885</b>	<b>366</b>	<b>131</b>	<b>95.7</b>	<b>56.2</b>	<b>55.0</b>	<b>15.7</b>
Chiang Mai	1,844	56.0	844,934	508	384	91.8	76.7	49.5	20.9
Lamphun	469	52.5	219,742	542	50	95.3	77.4	41.2	16.1
Lampang	830	67.1	336,808	437	44	96.3	66.0	47.9	19.5
Uttaradit	533	52.3	185,507	399	215	96.3	58.0	43.3	15.0
Phrae	630	68.3	196,902	423	107	96.9	76.8	39.5	14.9
Nan	847	53.5	158,723	332	65	89.7	74.3	34.1	14.5
Phayao	670	61.6	187,409	385	67	95.1	71.4	40.8	15.6
Chiang Rai	1,603	47.3	456,771	373	62	93.2	71.0	46.4	16.6
Mae Hong Son	406	33.3	35,813	141	13	58.2	57.9	12.4	9.4
Nakhon Sawan	1,389	36.1	402,303	375	68	95.1	26.9	46.3	13.8
Uthai Thani	590	42.4	134,452	411	83	94.6	47.7	40.7	11.8
Kamphaeng Phet	929	41.8	238,500	329	42	96.0	50.4	43.1	13.6
Tak	526	43.7	148,184	279	72	90.6	52.3	37.5	16.5
Sukhothai	784	50.6	207,767	343	40	94.1	54.4	40.8	11.1
Phitsanulok	1,029	49.4	322,102	383	64	96.6	59.8	48.2	15.8
Phichit	855	43.6	226,068	408	42	94.3	74.8	42.7	13.1
Phetchabun	1,414	43.0	305,449	306	33	94.2	51.1	41.2	13.3
<b>Northern Region</b>	<b>15,348</b>	<b>49.3</b>	<b>4,607,434</b>	<b>388</b>	<b>109</b>	<b>93.5</b>	<b>61.7</b>	<b>43.4</b>	<b>15.6</b>
Nakhon Ratchasima	3,652	44.6	794,137	311	67	95.9	63.4	42.9	8.9
Buri Ram	2,363	38.1	309,866	202	40	95.2	42.5	36.0	13.0
Surin	2,087	38.7	286,225	209	46	96.2	56.8	36.2	18.8
Si Sa Ket	2,547	36.4	256,106	177	73	96.1	47.1	29.2	18.8
Ubon Ratchathani	2,412	50.8	444,012	249	47	96.8	57.4	37.3	9.5
Yasothon	860	49.0	145,342	269	91	93.8	63.6	39.2	12.1
Chaiyaphum	1,542	48.8	230,285	206	42	97.0	48.1	38.0	9.1
Amnat Charoen	562	52.8	82,345	223	54	94.6	61.5	33.9	11.2
Nong Bua Lam Phu	579	51.5	91,257	183	79	97.7	57.3	39.7	13.1
Khon Kaen	2,177	44.7	526,153	300	43	96.5	61.3	40.1	14.0
Udon Thani	1,682	51.0	398,772	261	54	94.7	60.0	42.4	13.9
Loei	866	47.1	168,113	273	46	96.8	65.6	32.5	10.8
Nong Khai	1,226	45.2	197,279	219	40	96.9	65.8	36.4	8.6
Maha Sarakham	1,915	40.7	195,029	208	37	96.6	53.9	38.9	12.2
Roi Et	2,285	41.9	273,114	209	30	94.2	64.5	40.7	14.3
Kalasin	1,343	38.4	184,130	188	25	97.9	57.7	37.7	11.7
Sakon Nakhon	1,476	42.8	265,002	238	32	97.1	56.8	37.6	10.3
Nakhon Phanom	1,055	59.9	155,701	223	79	95.1	63.4	31.6	12.8
Mukdahan	500	51.8	91,568	272	45	93.9	64.9	34.4	18.6
<b>Northeastern Region</b>	<b>31,129</b>	<b>44.4</b>	<b>5,094,436</b>	<b>238</b>	<b>50</b>	<b>96.0</b>	<b>57.8</b>	<b>37.8</b>	<b>11.9</b>
Nakhon Si Thammarat	1,514	47.4	477,020	317	138	96.0	52.6	44.3	8.8
Krabi	385	58.2	194,847	475	65	96.3	29.3	43.4	10.9
Phang-nga	316	73.4	98,725	400	95	95.2	59.6	47.7	13.2
Phuket	90	91.1	307,211	974	386	97.9	36.4	66.7	22.1
Surat Thani	943	48.1	471,418	486	266	93.4	59.0	49.1	12.3
Ranong	167	61.1	54,720	303	210	94.9	62.3	39.9	12.1
Chumphon	697	39.7	226,840	471	123	96.3	66.9	47.5	10.2
Songkhla	956	73.7	591,058	446	50	96.6	56.2	51.8	20.0
Satun	270	57.4	107,495	378	276	92.0	35.8	40.2	13.2
Trang	750	74.5	305,292	500	100	95.4	38.7	42.3	15.4
Phatthalung	669	50.2	192,424	383	114	95.9	45.8	44.6	12.4
Pattani	613	71.9	182,438	286	21	84.0	47.7	32.2	8.7
Yala	371	56.3	231,714	492	54	95.0	77.0	35.9	14.3
Narathiwat	570	64.4	212,185	298	7	86.6	75.1	29.9	6.9
<b>Southern Region</b>	<b>8,311</b>	<b>58.5</b>	<b>3,653,387</b>	<b>422</b>	<b>121</b>	<b>94.2</b>	<b>54.2</b>	<b>44.1</b>	<b>12.7</b>

See Annex II for data sources

Table A1.8: Participation

Location	Political participation, 2007		Civil society participation, 2007		
	Eligible voters	Voter turnout	Community groups	Households participating in local groups	Households participating in social services
	(number)	(%)	(per 100,000 pop)	(%)	(%)
	1	2	3	4	5
<b>Kingdom</b>	<b>44,002,593</b>	<b>74.52</b>	<b>51</b>	<b>94.7</b>	<b>95.3</b>
<b>Bangkok Metropolis</b>	<b>4,148,974</b>	<b>69.46</b>	<b>6</b>	<b>n.a</b>	<b>n.a</b>
Samut Prakan	809,291	73.33	12	91.0	92.8
Nonthaburi	755,613	74.17	4	82.7	91.7
Pathum Thani	642,520	74.42	12	98.1	99.6
Phra Nakhon Si Ayutthaya	552,521	77.14	16	95.0	95.3
Ang Thong	212,202	76.24	41	99.1	99.7
Lop Buri	542,153	74.64	49	97.4	97.1
Sing Buri	149,548	85.45	94	98.0	97.4
Chai Nat	242,600	82.53	63	94.9	94.9
Saraburi	429,549	79.70	31	97.0	95.5
Chon Buri	867,295	71.35	16	87.4	92.8
Rayong	404,914	76.20	38	85.2	88.8
Chanthaburi	373,156	76.16	37	90.2	90.0
Trat	148,649	75.40	236	92.6	93.0
Chachoengsao	475,677	75.83	66	95.5	97.1
Prachin Buri	305,045	81.03	62	98.9	98.6
Nakhon Nayok	178,795	79.57	37	94.7	90.7
Sa Kaeo	370,528	74.09	20	94.6	92.0
Ratchaburi	597,975	80.09	87	91.3	89.4
Kanchanaburi	521,176	77.24	63	96.3	96.6
Suphan Buri	617,478	75.54	28	96.2	96.7
Nakhon Pathom	603,558	77.79	37	89.3	90.9
Samut Sakhon	331,966	73.85	18	84.5	85.6
Samut Songkhram	148,291	75.45	128	95.8	99.3
Phetchaburi	330,064	82.01	61	97.1	98.1
Prachuap Khiri Khan	352,153	72.55	76	93.4	94.7
<b>Central Region</b>	<b>10,962,717</b>	<b>76.11</b>	<b>41</b>	<b>93.7</b>	<b>94.4</b>
Chiang Mai	1,149,288	83.16	24	93.8	93.8
Lamphun	308,030	88.90	88	95.2	95.5
Lampang	572,062	82.86	25	96.7	98.4
Uttaradit	347,660	73.11	44	97.8	95.7
Phrae	356,013	79.94	32	97.1	95.4
Nan	351,880	78.55	41	97.1	95.7
Phayao	365,264	78.45	44	96.2	96.5
Chiang Rai	819,440	77.27	102	98.5	99.2
Mae Hong Son	140,628	82.02	23	86.8	93.2
Nakhon Sawan	770,766	73.00	49	96.0	100.0
Uthai Thani	239,086	74.20	119	94.6	94.9
Kamphaeng Phet	501,340	71.85	10	99.4	100.0
Tak	284,675	84.38	17	86.9	91.5
Sukhothai	403,298	79.97	40	97.5	98.5
Phitsanulok	605,277	73.64	42	90.0	92.4
Phichit	401,495	71.05	42	92.6	94.3
Phetchabun	718,730	68.97	12	94.4	95.3
<b>Northern Region</b>	<b>8,334,932</b>	<b>77.31</b>	<b>43</b>	<b>95.2</b>	<b>96.3</b>
Nakhon Ratchasima	1,796,488	72.94	47	96.4	95.6
Buri Ram	1,072,280	67.94	46	97.5	96.3
Surin	835,158	75.52	27	98.1	97.4
Si Sa Ket	945,060	75.98	24	98.0	93.9
Ubon Ratchathani	1,178,173	76.41	28	99.6	99.5
Yasothon	389,261	70.32	53	99.6	100.0
Chaiyaphum	807,269	70.17	108	98.8	96.7
Amnat Charoen	259,987	72.40	213	99.6	99.3
Nong Bua Lam Phu	312,232	75.48	54	96.2	92.1
Khon Kaen	1,275,709	71.02	44	96.2	96.0
Udon Thani	967,173	75.37	68	97.4	95.1
Loei	450,300	75.16	70	96.6	93.3
Nong Khai	603,415	68.19	59	97.3	93.2
Maha Sarakham	680,568	71.46	185	99.5	100.0
Roi Et	945,373	68.22	46	99.9	100.0
Kalasin	727,139	68.56	68	98.2	98.3
Sakon Nakhon	782,376	66.73	50	96.8	98.4
Nakhon Phanom	485,415	67.63	75	100.0	100.0
Mukdahan	235,456	74.48	305	99.5	98.6
<b>Northeastern Region</b>	<b>14,748,832</b>	<b>71.82</b>	<b>63</b>	<b>98.0</b>	<b>97.0</b>
Nakhon Si Thammarat	1,055,247	73.31	78	96.8	98.5
Krabi	271,488	79.57	152	93.8	98.0
Phang-nga	172,349	80.26	210	95.4	97.5
Phuket	214,329	74.30	16	99.8	95.2
Surat Thani	670,258	77.62	25	95.4	94.8
Ranong	111,125	75.92	101	92.9	94.2
Chumphon	339,924	79.60	272	94.5	95.1
Songkhla	901,757	78.67	88	93.2	92.1
Satun	187,123	81.95	85	88.2	91.4
Trang	413,790	83.01	27	87.8	92.9
Phatthalung	344,900	84.46	140	96.1	94.6
Pattani	396,050	76.63	37	89.2	94.9
Yala	287,676	78.09	53	88.8	94.7
Narathiwat	441,122	77.66	26	90.3	94.5
<b>Southern Region</b>	<b>5,807,138</b>	<b>78.02</b>	<b>81</b>	<b>93.4</b>	<b>95.2</b>

See Annex II for data sources



**Annex**

# Data Sources



## Table A1.0 Basic Data

Columns 1-3	<b>Key Registration Statistics 2007</b> , Registration Administration Bureau, Department of Local Administration, Ministry of Interior, December 31, 2007.
Columns 4-5	<b>Household Socioeconomic Survey 2007</b> , National Statistical Office.
Columns 6-7	Gross Domestic Product and Per Capita Income by Region and Province, National Account Division, Office of National Economic and Social Development Board, 2007.
Column 8	Royal Thai Survey Department, Royal Thai Army
Column 9	Wildlife and Plant Conservation Department, Ministry of Natural Resources and the Environment. <b>Note:</b> 1. Forest area here means forest of all types such as evergreen, pine, mangrove, mixed deciduous, dry dipterocarp, scrub, swamp, mangrove and beach forest, either in the national forest reserves, national parks, wildlife sanctuaries, forest working plan with an area of 5 hectares (3.125 rai) or more, with tree taller than 5 metres or more, and with canopy covering more than 10% of the ground area.
Column 10	<b>Thailand's Agriculture Statistics 2007</b> , Office of Agricultural Economics, Ministry of Agriculture and Cooperatives (625 rai = 1 sq.km) <a href="http://www.oae.go.th/statistic/yearbook50/section13/sec13table129.pdf">http://www.oae.go.th/statistic/yearbook50/section13/sec13table129.pdf</a>
Column 11	Unclassified land = Total land - Forest land and farm holding land.
Column 12	Calculated from data on total population and provincial areas.

## Table A1.1 Health

Columns 1-6	Bureau of Health Policy and Strategy, Office of the Permanent Secretary, Ministry of Public Health
Column 7	Department of Disease Control, Ministry of Public Health <b>Note:</b> 1. In 2007, DDC did not receive data on sexually transmitted diseases from all the provinces.
Columns 8-10	Bureau of Epidemiology, Department of Disease Control, Ministry of Public Health
Columns 11-13	<b>Health and Welfare Survey 2007</b> , National Statistical Office. <b>Note:</b> 1. Interviewees were asked whether they or any of their household members had any illness or were sick during the one-month period prior to the interview.
Column 14	Department of Mental Health, Ministry of Public Health, 2007 <b>Notes:</b> 1. Mental illness includes cases of schizophrenia, anxiety, depression, mental retardation, epilepsy, drug-addiction, other mental illnesses, attempted suicide. 2. Data include only those who seek health care. 3. Population by province as of December 31, 2007 from Registration Administration Bureau, Department of Local Administration, Ministry of Interior.
Columns 15-23	<b>Cigarette Smoking and Alcohol Consumption Survey 2007</b> , National Statistical Office. <b>Notes:</b> 1. The survey covers population aged 11 and over. 2. Alcohol drinkers include those who drink every day, every other day, every week, every month, and occasionally. 3. Smokers include those who smoke regularly and occasionally.
Columns 24-26	<b>Exercise Behaviour Survey 2007</b> , National Statistical Office <b>Notes:</b> 1. The survey covers population 11 years and over 2. Population that exercise means those who practice sports or exercise less than 3 days/week, 3-5 days/week, 6-7 days/week, or occasionally.
Columns 27-29	<b>Disability Survey 2007</b> , National Statistical Office. <b>Notes:</b> 1. The survey covers 31 categories of disability. 2. The survey covers population aged 7 years and older who are sick for more than 6 months or have chronic health problem for more than 6 months.

Columns 30-34 **Health Personnel 2007**, Bureau of Health Policy and Strategy, Office of the Permanent Secretary, Ministry of Public Health.  
[http://hrm.moph.go.th/res50/report50/res50\\_tb24.xls](http://hrm.moph.go.th/res50/report50/res50_tb24.xls)

### Table A1.2 Education

Columns 1-13 **Labour Force Survey, 3rd Quarter, 2007**, National Statistical Office.  
**Notes:** 1. Upper secondary level includes general education, vocational/technical and teacher training.  
 2. Diploma level includes academic education, higher vocational/technical education and teacher training.  
 3. University level includes bachelor's degree, master degree and doctoral degree.

Columns 14-22 ICT Center, Office of the Permanent Secretary, Ministry of Education.  
**Notes:** 1. Number of students in primary, lower-secondary and upper-secondary levels including vocational schools under various authorities, by sex and province, academic year 2007.  
 2. Population by age group, sex, and province as of December 2007 is from Department of Local Administration, Ministry of Interior.

Columns 23-25 National Education Assessment Office (Public Organization)  
**Note:** 1. Upper-secondary students' O-Net scores on Thai, mathematics, social studies, physics and biology, and English, 2007.

Columns 26-28 ICT Center, Office of the Permanent Secretary, Ministry of Education.  
**Note:** 1. Number of upper-secondary students excludes vocational/technical students.

### Table A1.3 Employment

Columns 1-20 **Labour Force Survey, 3rd Quarter, 2007**, National Statistical Office.  
**Notes:** 1. The survey covers population aged 15 years and over.  
 2. Current labour force = employed persons + unemployed persons.  
 3. Unemployment rate = (unemployed persons/current work force)\*100.  
 4. Underemployment rate = (employed persons who work less than 35 hours per week and willing to work more/ employed persons)\*100.

Columns 21-22 **Social Security Statistics 2007**, Social Security Office, Ministry of Labour  
**Notes:** 1. Insured persons include those under articles 33 and 39 as of December 2007.  
 2. Percentage of insured workers = number of total insured workers/ current labour force calculated from the Labour Force Survey, 3rd Quarter, 2007.

Columns 23-25 **Social Security Statistics 2007**, Social Security Office, Ministry of Labour  
**Notes:** 1. Occupational injuries per 1,000 employees under the Workmen's Compensation Fund include cases of death, disability, loss of organ, inability to work for more than 3 days, inability to work for fewer than 3 days.  
 2. Occupational injury per 1,000 employees = Number of occupational injuries X 1,000/Number of employees as of December 2007.

### Table A1.4 Income

Columns 1-10 **Household Socio - economic Survey 2004 and 2007**, National Statistical Office.  
**Notes:** 1. Household income changes not adjusted by inflation rate.  
 2. Average household debt = Average debt of indebted households.

Columns 11-13 Office of Community Economics and Income Distribution, Office of the National Economic and Social Development Board. Calculated from data from **Household Socio-economic Survey 2007**, National Statistical Office.  
**Note:** 1. Poverty line, poverty incidence, and poverty headcount are expenditures-based.

Column 14 Gini index, Thailand Poverty Mapping 2007, National Statistical Office. [http://service.nso.go.th/nso/nsopublish/service/poverty50/kingdom\\_total\\_inc.htm](http://service.nso.go.th/nso/nsopublish/service/poverty50/kingdom_total_inc.htm)

### Table A1.5 Housing and Living Environment

Columns 1-11	<b>Household Socio-economic Survey 2007</b> , National Statistical Office. <b>Notes:</b> 1. Housing security is defined as living in one's own house and on one's own land. 2. Safe sanitation comprises of private or shared flush latrine, private or shared moulded latrine.
Columns 12-15	Thailand Disaster Statistics 2007, Department of Disaster Prevention and Mitigation, Ministry of Interior. ( <a href="http://www.nirapai.com">www.nirapai.com</a> ) <b>Notes:</b> 1. Flood and drought statistics 2007 by province during 1 January-31 December 2007. 2. Calculation is based on population at December 31, 2007 from Registration Administration Bureau, Department of Local Administration, Ministry of Interior.

### Table A1.6 Family and Community Life

Columns 1-10	<b>Labour Force Survey, 3rd Quarter, 2007</b> , National Statistical Office. <b>Notes:</b> 1. Elderly is defined as a person aged 60 and over. 2. Single-headed household means that the household head is either widowed, divorced or separated.
Columns 11-12	<b>Survey of Older Persons in Thailand 2007</b> , National Statistical Office.
Column 13	<b>National Rural Development 2C (Khor Chor Chor 2 Khor), 2007</b> , Community Development Department, Ministry of Interior.
Columns 14-16	<b>Labour Force Survey, 3rd Quarter, 2007</b> , National Statistical Office. <b>Note:</b> 1. Working children are children aged 15-17 not attending school. They may be employed, unemployed, seasonally unemployed or assigned to do work at home.
Columns 17-18	Crime Statistics of Thailand 2007, Royal Thai Police. <b>Notes:</b> 1. Violent crimes reported include murder, gang robbery, robbery, kidnap, and arson. 2. Calculation is based on population as of December 31, 2007, Registration Administration Bureau, Department of Local Administration, Ministry of Interior.

### Table A1.7 Transport and Communication

Columns 1-2	<b>National Rural Development 2C (Khor Chor Chor 2 Khor), 2007</b> , Community Development Department, Ministry of Interior.
Columns 3-4	Land Transport Management Bureau, Department of Land Transport <a href="http://www.dlt.go.th/statistics_web/statistics.html">http://www.dlt.go.th/statistics_web/statistics.html</a> <b>Notes:</b> 1. Vehicle means all types of vehicle under the Motor Vehicle Act. 2. Calculation is based on population as of December 31, 2007 from the Registration Administration Bureau, Department of Local Administration, Ministry of Interior.
Column 5	Number of land transport accidents as of December 31, 2007 from ICT Center, Royal Thai Police.
Columns 6-7	<b>Household Socio-economic Survey 2007</b> , National Statistical Office.
Columns 8-9	<b>ICT Household Survey, 3rd Quarter, 2007</b> , National Statistical Office. <b>Note:</b> 1. The survey covers population aged 6 years and over.

### Table A1.8 Participation

Columns 1-2	Result of general election for party list members, House of Representatives, 23 December 2007. Election Commission of Thailand.
Column 3	Community organizations and networks, as of October 2007, Community Organizations Development Institute <a href="http://www.codi.or.th/web/support/index.htm">http://www.codi.or.th/web/support/index.htm</a> <b>Notes:</b> 1. Community groups include community business, occupational groups, cultural/local wisdom, community welfare, environmental, financial, community media, social network and partnership groups. 2. Calculation is based on population as of December 31, 2007 from the Registration Administration Bureau, Department of Local Administration, Ministry of Interior.
Columns 4-5	<b>Basic Minimum Needs (BMN) 2007</b> , Community Development Department, Ministry of Interior.