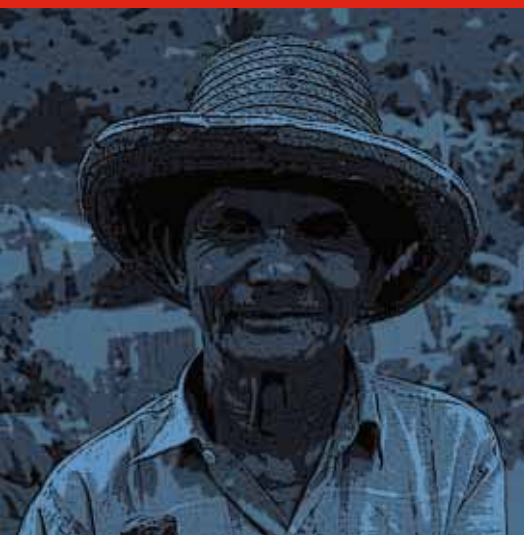




# Thailand Human Development Report 2007



## Sufficiency Economy and Human Development



**Thailand  
Human Development  
Report 2007**

**Sufficiency Economy  
and Human Development**

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# Foreword



## **His Excellency General Surayud Chulanont (Ret.)**

*Prime Minister of the Kingdom of Thailand*

It is my pleasure and honour to introduce the *Thailand Human Development Report 2007*, with the theme of “Sufficiency Economy and Human Development”.

Bestowed by His Majesty King Bhumibol Adulyadej on the people of the Kingdom of Thailand, the Sufficiency Economy philosophy has now firmly taken root in Thai society. It has become the guiding philosophy for our country’s development strategies and policies, including Thailand’s 10th National Economic and Social Development Plan for 2007–2011. Indeed, it is the *modus operandi* for my Government’s efforts to promote human development, reduce income inequalities, and ensure sound foundations for sustainable economic growth.

Gaining momentum in Thailand after the 1997 financial crisis, the Sufficiency Economy thinking has increased in importance over the years, right up to this year of political transition. The thinking advocates growth with economic stability over rapid but unbridled growth. It emphasizes sustainable development, sound macroeconomic policies, and the equitable sharing of the benefits of economic prosperity. At the same time, it shuns excessive risk-taking, untenable inequalities, and the wasteful use of natural resources.

At the community level, the Sufficiency Economy approach stresses the importance of “self-immunity”, in other words, the need for communities to possess resilience against external or internal shocks, be they economic downturns, soaring fuel prices, natural disasters, ill health in families, or bad harvests.

At the national level, the idea of “self-immunity” is equally if not even more important. The Sufficiency Economy thinking helps us to build macroeconomic resilience to cope with the vagaries of the global economy and the negative effects of globalization.

The publication and dissemination of the *Thailand Human Development Report 2007* is a timely and useful contribution to the ongoing debate about how to translate the Sufficiency Economy thinking into effective policies and concrete action plans to transform the way we tackle poverty, manage the economy, run businesses, and govern our country – for the ultimate benefit of the Thai people.

Just as important, this Report will help spread the message of the Sufficiency Economy beyond the borders of Thailand. During these times when the world is facing new challenges such as global warming and rapid globalization, the Sufficiency Economy philosophy – emphasizing moderation, responsible consumption, and resilience to external shocks – is of great relevance not only to Thailand but to countries and communities across the globe.

The Sufficiency Economy offers an effective approach to promoting sustainability and managing risks; a survival strategy for travelling down the fast-moving and sometimes treacherous road of globalization, with its illusions and pitfalls. In such a world, what could be more important than a good strategy?

General  (Ret.)  
(Surayud Chulanont)  
Prime Minister of the Kingdom of Thailand

# Preface

The first global *Human Development Report* was published in 1990 with the single goal of putting people at the centre of the global development debate. Every year since, these reports have addressed global challenges from a people-centred perspective, with a very simple message: Human development is about much more than the rise or fall of national incomes. It is about people. It is about creating an environment in which people can develop their full potential and live long, healthy, productive and creative lives in accord with their needs, cultures and interests.

People are the real wealth of nations. Development is thus about expanding the choices people have to lead lives that they value. And it is about much more than economic growth, which is only a means – if a very important one – of enlarging people’s choices.

As of today, over 400 national human development reports have been produced in 135 countries. These reports are helping to generate lively debates around the policies and actions needed to accelerate human development and achieve the Millennium Development Goals. Indeed, they have come to serve as important tools for policy advocacy and dialogue, placing human development at the forefront of national political agendas.

Thailand is no exception. The previous national human development report on Thailand, published in 2003, focused on the theme “Community Empowerment and Human Development”. The report celebrated the extraordinary dynamism of Thailand’s community movements, identified the barriers to greater community empowerment, and proposed changes in policies and institutions to achieve greater participation, social equity, environmental conservation and other key goals.

This new *Thailand Human Development Report 2007* is a logical successor to the 2003 volume, but approaches the topic from a very different angle and can lay claim to a very special uniqueness. It presents the development thinking of Thailand’s long-reigning monarch, His Majesty King Bhumibol Adulyadej. While these ideas have been widely and intensively discussed within Thailand in recent years, and are now adopted as the basis of national government policy, this report is the first attempt to explain these ideas and their application in detail for a wider global audience.

The King’s philosophy of “Sufficiency Economy” has great global relevance during these times of economic uncertainties, global warming and unsustainable use of natural resources. It offers a more balanced and sustainable path of development – a much-needed alternative to the unsustainable road the world is currently travelling down. Advocating economic stability over unbridled growth, it calls for prudent management of the economy, a step-by-step approach to market liberalization and a strengthening of society’s immunity against the negative side effects of globalization.

Like human development, the Sufficiency Economy places humanity at the centre, focuses on well-being rather than wealth, makes sustainability the very core of the thinking, understands the need for human security and concentrates on building people’s capabilities to develop their potential. And it adds a spiritual dimension to human development, reflecting the King’s own character, convictions and sincerity.

We at UNDP, as a member of Thailand's UN Country Team, are immensely honoured to have this opportunity to contribute to the policy dialogue about the practical application of Sufficiency Economy in Thailand, and through this report to disseminate its important messages across the globe.



**Joana Merlin-Scholtes**

UN Resident Coordinator and  
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The analysis and policy recommendations of this Report do not necessarily reflect the view of the United Nations Development Programme, its Executive Board or its Member States. The Report is an independent publication commissioned by UNDP. It is the fruit of a collaborative effort by a panel of eminent consultants and the *Thailand Human Development Report* team.



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The production of the Report was guided by an Advisory Panel, chaired by H.E. Kasem Watanachai, Privy Councillor, and co-chaired by H.E. Dr. Chirayu Israngkun Na Ayuthaya, Director General of the Bureau of the Crown Property.

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# Acronyms

GDP	Gross Domestic Product
HAI	Human Achievement Index
HDI	Human Development Index
HIV/AIDS	human immunodeficiency virus/acquired immunodeficiency syndrome
HRD	Human resource development
MDGs	Millennium Development Goals
NESDB	National Economic and Social Development Board
NGO	non-governmental organization
OECD	Organisation for Economic Co-operation and Development
R&D	research and development
SME	small- and medium-sized enterprise
TDRI	Thai Development Research Institute
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WHO	World Health Organization





# Overview

The Sufficiency Economy is an innovative approach to development designed for practical application over a wide range of problems and situations. This approach was formulated by King Bhumibol Adulyadej of Thailand as a result of his long experience in development work. Owing to its practical nature, its robust simplicity, and its special relevance in the era of globalization, the approach deserves to be more widely known.

King Bhumibol Adulyadej ascended to the throne of Thailand on 9 June 1946 at the age of eighteen. From early in his reign he showed that he would become a most unusual monarch for the modern age. He grew rice, bred fish and kept cows in the palace compound. He liked clumping around muddy fields directing irrigation projects. He became a pioneer in devising techniques for purifying water by aeration and rain-making through cloud-seeding. He spent as much time as possible on tours around the country, talking to the people, launching development projects, and checking on their results.

His reign almost exactly coincides with the 'development era' in Thailand. By most conventional measures, Thailand's development has been a great success. But from early in his reign, King Bhumibol recognized that the pattern of Thailand's development carried great risks. In particular, the smallholder farmers who were the largest element in the population were in danger of being ignored in this development, or else becoming its victims. The King did not object to national policy which would be beyond his constitutional role. Instead, he provided practical demonstrations of an alternative path and its results. He developed technologies, infrastructure, and production systems which were appropriate for the small-scale farmer. He launched thousands of projects to implement these measures for the benefit of local communities. And he founded development centres to catalogue and disseminate the learnings.

Through this time, he also meditated on the practical learnings from these projects, filtered through a spiritual approach to life. From the 1970s onwards, he spoke about these meditations – first mainly to groups of students at university graduation ceremonies, later to a national audience on television. His thoughts were partly in the form of general principles of living – the importance of learning, ethics, perseverance, tolerance – and partly practical observations on development at the local level and the national level.

Ultimately, the King's ideas were dubbed the Sufficiency Economy, which can be summarized in the following way. The Sufficiency Economy is an approach to life and conduct which is applicable at every level from the individual through the family and community to the management and development of the nation. It promotes a middle path, especially in developing the economy to keep up with the world in the era of globalization. Sufficiency has three key principles: moderation; wisdom or insight; and the need for built-in resilience against the risks which arise from internal or external change. In addition, those applying these principles must value knowledge, integrity, and honesty, and conduct their lives with perseverance, toleration, wisdom, and insight.

Sufficiency in this sense should not be confused with self-sufficiency, turning inward, rejecting globalization, or retreating towards the mirage of a simpler world. Rather, this approach offers a way to cope with the unavoidable realities of the market and globalization in the contemporary world. The Sufficiency approach stresses that individuals need a certain measure of self-reliance to deal best with the market, and countries need a certain measure of self-reliance to deal with globalization. Sufficiency has the dual meaning of 'not too little' and 'not too much.' The principle of moderation or the middle way is a guide for finding the right balance between internal resources and external pressures, between the needs of society at the grassroots, and the imperatives of the global economy.

The *Thailand National Human Development Report 2007* focuses on these ideas. The approach of human development puts people and their well-being at the centre of development and provides an alternative to the traditional, more narrowly focused economic growth paradigm. Human development is about people, and about expanding their choices and capabilities to live long, healthy, knowledgeable, and creative lives. The thinking on the Sufficiency Economy clearly belongs in the realm of human development. It focuses on humanity, makes sustainability key, favours well-being over wealth, and insists on the importance of learning. However, there are additional reasons why this theme has been selected for this report.

First, the thinking on the Sufficiency Economy has developed as a very practical effort to achieve the goals of human development, and has won support because of its simple realism. As such, it represents a fund of learning developed from the bottom-up which has real practical applicability in other places which face similar challenges in this globalized world.

Second, it goes beyond much development thinking by linking the search for people-centred, sustainable development with the cultivation of human values. In short, it is not so much about technique as about right thinking. As such, it helps to add a new depth to the idea of human development.

On 26 May 2006, the UN Secretary General Kofi Annan presented a Human Development Lifetime Achievement Award to King Bhumibol. He said,

*His Majesty's 'Sufficiency Economy' philosophy ... is of great relevance to communities everywhere during these times of rapid globalization. The philosophy's 'middle way' approach strongly reinforces the United Nations' own advocacy of a people-centred and sustainable path toward human development. His Majesty's development agenda and visionary thinking are an inspiration to his subjects, and to people everywhere.*

At present there is no comprehensive analysis in English of how the King's ideas evolved, what they mean, how they are used, and what is their potential scope. In recognition of the 60th anniversary of King Bhumibol Adulyadej's reign, and in the belief that his thinking is a significant contribution to human development, this year's Human Development Report for Thailand is devoted to the Sufficiency Economy.

## **Plan of the Report**

### **Chapter 1: The State of Human Development in Thailand**

Usually in these reports, the review of Human Development indicators is consigned to the back of the book. In this case the review has been moved to the front to provide a context for the emergence of the principle of the Sufficiency Economy. These indicators show that Thailand's human development continues to progress, and Thailand is well on track to fulfilling all or most of the Millennium Development Goals. Yet, there remain some problems. Household income is highly skewed. Pockets of persistent poverty remain. The provision of public goods differs greatly in quality and quantity in different areas of the country. At the same time, there are growing signs of the consequences of the steep deterioration in the natural environment over the past generation, and of the strains placed on family and community by labour migration.

## **Chapter 2: Thinking out the Sufficiency Economy**

This chapter traces the emergence of the idea of the Sufficiency Economy against the background of Thailand's social and economic change. Over half a century, the country was transformed by sustained economic growth. Incomes on average multiplied seven times. But this success came with some severe costs: high socio-economic inequality; rapid destruction of the natural environment; high pressures on family and community; and a growing sense that people had lost control over their own lives and futures.

Over this time, King Bhumibol launched some three thousand Royal Projects, mostly designed to give more self-reliance and broader opportunities to the small farmer who was often the victim of unbalanced development. From the 1970s onwards, the King put his learning from these projects into the public domain. His key idea was that people needed more self-reliance in order to cope with rapid change in a globalized world. He outlined an approach to life and decision-making which would build that foundation of self-reliance and the capacity for self-development.

With the onset of the 1997 economic crisis, the King proposed that the same principles could be applied to the national economy struggling to manage the forces of globalization. In the wake of the crisis, the King's thinking was given the title of the Sufficiency Economy, and the principles were systematized for application at any level from the individual through the community and enterprise to the management of the national economy.

## **Chapter 3: Sufficiency Economy in Action**

This chapter reviews examples of the practical application of the Sufficiency Economy in Thailand in various sectors and activities. The area of agriculture and community development was the birthplace of the theory, and is still the area where the application is most advanced. A case study from Thailand's northeast region details how communities took the decision to withdraw from cash-oriented mono-cropping which landed them in debt, and to pursue the strategy of self-reliance. From there they were able to develop local productive capacity and marketing networks by stages until two decades later the network has over 100,000 members and much denser linkages with the outside world. Along the way, the communities have invested in their own social capital including institutions to codify and disseminate their own learnings. The network is now a prominent showcase for the Sufficiency approach.

Natural resources are a key foundation for self-reliance. Sufficiency thinking has evolved several techniques for non-intrusive, sustainable approaches to conserving the natural environment.

Several firms, both large and small, have adopted the Sufficiency approach as a guide to management and planning. This approach encourages them to focus on sustainable profit, to adhere to an ethical approach to business, to pay special attention to their employees, to respect nature, to have careful risk management, and to grow where possible from internal resources. Firms which have adopted this approach have enjoyed success over the long term. Research shows that the Sufficiency approach is compatible with codes of business conduct such as corporate governance and corporate social responsibility, while also adding a process and commitment for taking management and planning decisions in conformity with such codes. The Sufficiency approach is being translated into planning tools for broader use.

Economists have shown that the Sufficiency approach can be applied in macro-management, policy design, and development planning. In the aftermath of the 1997 crisis, the Sufficiency emphasis on the need for resilience helped to plot a new range of tools for managing risk and instability in the macro-economy. The development of Thailand's tenth five-year plan has been based on the Sufficiency Economy. The plan puts people firmly at the centre of development, and aims for an ambitious review of all the nation's resources in order to deliver more balanced, sustainable, and equitable growth.

The long-term impact of the Sufficiency approach depends on how deeply the idea is embedded in the national culture. In this respect, the role of education is key. Teaching the values and methods of the Sufficiency approach has been incorporated into Thailand's school curriculum. Teaching is largely through learning by doing. Experiments are under way to incorporate Sufficiency more into the management of schools as well.

#### **Chapter 4: Sufficiency Economy Going Forward**

Both the Sufficiency Economy and human development put people at the centre of development, and aim to expand people's opportunities to live better lives. The Sufficiency approach adds to human development in two ways: first, by providing a *process* for analysing situations, identifying objectives, setting plans, and making decisions; and second, by placing greater emphasis on mental and spiritual development.

Six key messages emerge from this Report.

1. The Sufficiency Economy is central to alleviating poverty and reducing the economic vulnerability of the poor.
2. The Sufficiency Economy is a means towards community empowerment and the strengthening of communities as foundations of the local economy.
3. The Sufficiency Economy takes corporate responsibility to a new level by raising the strength of commitment to practices conducive to long-term profitability in a competitive environment.
4. Sufficiency principles are vital for improving standards of governance in public administration.
5. The Sufficiency Economy can guide macroeconomic policy making to immunize a country against shocks and to plan strategies for more equitable and sustainable growth.
6. Sufficiency thinking demands a transformation of human values, a "revolution in the mindset", necessary for the advancement of human development.

This revolution in the mindset requires visionary and courageous leadership at all levels. King Bhumibol has served as scientist, philosopher, advocate, and exemplar of the Sufficiency Economy in Thailand. He offers an example of outstanding leadership that might be unique, but is still an inspiration from which the world can learn.



1

# The State of Human Development in Thailand

# The State of Human Development in Thailand

Human development is about people, and about expanding their choices to live full, creative lives, in good health and security, and with freedom and dignity. That means creating an environment in which people can develop their full potential, and providing them with the tools to enhance their own human capabilities – to accumulate knowledge, to gain access to resources, and to participate in the community. Without these capabilities, many choices are simply not available, and many opportunities in life remain inaccessible.

Economic growth is not an end in itself, but a means to achieve human development. And growth will only do so if it creates jobs, reduces poverty, respects the environment, and generates the necessary resources for essential social services.

This chapter offers a broad assessment of the state of human development in Thailand, using indicators and available statistics to map out progress, disparities and persistent challenges. It paints a picture of dynamic overall progress coexisting with stark inequities and persistent development challenges. The assessment not only helps in understanding the context in which the Sufficiency Economy movement emerged, but makes a powerful case for the need to achieve more balanced and equitable development in the future.

## Overall progress...

Thailand is a middle-income country that has seen remarkable progress in human development in the last 20 years. It will achieve most if not all of the United Nations' Millennium Development Goals (MDGs) well in advance of 2015 (see Table 1.1). Poverty has fallen from 38 percent in 1990 to 11 percent in 2004. The proportion of underweight children has dropped by nearly half. Most children are in school, and the average years spent in education is increasing. Malaria is no longer a problem in most of the country. Annual new HIV infections have been reduced by more than 80 percent since 1991, the peak of the epidemic.

Strides are being made toward gender equality. The lives of slum dwellers have improved, and some progress has been achieved in tackling urban pollution.

## ...stark inequalities

But this progress has not benefited everyone equally. Thailand's cities have grown faster than its countryside. Poverty is still widespread in the rural Northeast, North and far South of the country. Household savings have declined, while the incidence and level of debt have increased. Despite a high level of school enrolment, the quality of education and inadequate training for workers hinders Thailand's ability to reap the benefits of globalization and threatens its future human development.

Access to health services is skewed. Maternal mortality remains very high in the Muslim-majority area in the far South. Child malnutrition persists among hilltribe people in remote northern areas. Safety at work is uncertain in industrial zones. Overuse of pesticides is a threat to many in rural areas. Pollution and natural disasters are on the increase. The HIV/AIDS epidemic is on the move again among at-risk groups in the South and in industrial areas.

## Assessing human development in Thailand

A human development outlook assesses development from a people-centred point of view. This approach follows a human's lifecycle, starting with the first essential thing that everyone must have on 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 have a decent *housing and living environment*, to enjoy a *family and community life*, to establish *contacts and communications* with others, and, last but not least, to participate as a member of society.

**Table 1.1 Millennium Development Goals in Thailand**

MDG Target	Scorecard
1. Halve, between 1990 and 2015, the proportion of people living in extreme poverty	Already achieved
2. Halve, between 1990 and 2015, the proportion of people who suffer from hunger	Already 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	Not applicable <sup>1</sup>
6. Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio	Not applicable <sup>2</sup>
7. Have halted by 2015 and begun to reverse the spread of HIV/AIDS	Already achieved, but with warning signs of resurgence
8. Have halted by 2015 and begun to reverse the incidence of malaria, tuberculosis, and other major diseases	Already achieved for malaria; potentially for tuberculosis
9. Integrate the principles of sustainable development into country policies and programmes and reverse the losses of environmental resources	Potentially
10. Halve by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation	Already achieved
11. By 2020 to have achieved a significant improvement in the lives of slum dwellers	Likely

Source: UNDP, *Thailand Millennium Development Goals Report 2004*, 2004.

This chapter uses the Human Achievement Index (HAI) developed by UNDP in 2003 as a tool to assess the state of human development across Thailand. The HAI is a composite index, using 40 indicators that cover eight aspects of human development:

- health,
- education,
- employment,
- income,
- housing and living environment,

- family and community life,
- transport and communication, and
- participation.

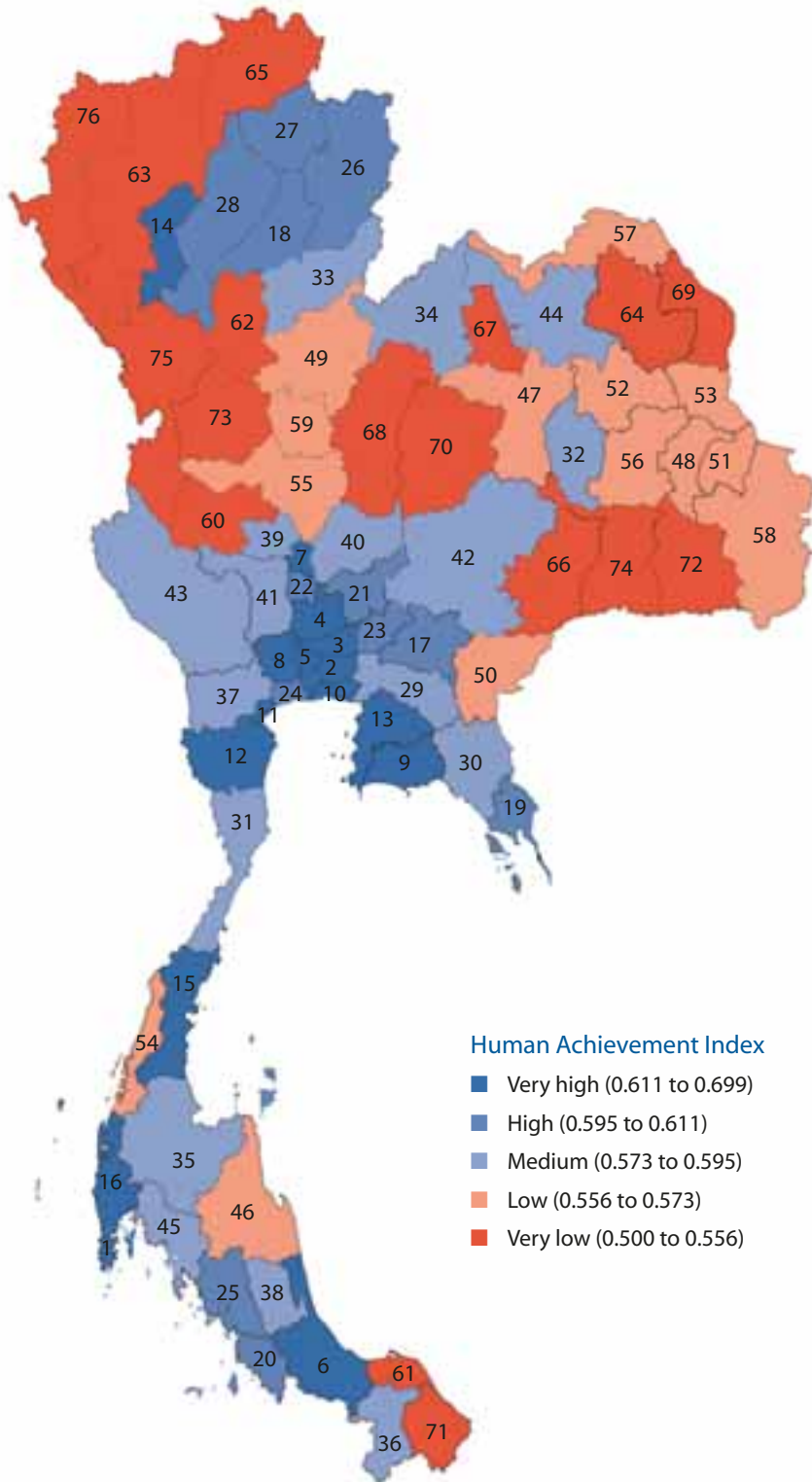
The HAI provides a summary measure of human development, and allows comparison across the 76 provinces of Thailand.

It places Phuket as having the highest human development level and Mae Hong Son, a remote, mountainous province in the North, as the most deprived. (For a full account of the HAI, please refer to Annex I.)

<sup>1</sup> Under-five mortality already approaching OECD levels, too low to reduce by two thirds.

<sup>2</sup> Maternal mortality already approaching OECD levels, too low to reduce by three quarters.

Figure 1.1 Human Achievement Index



Rank

- 1 Phuket
- 2 Bangkok
- 3 Pathum Thani
- 4 Phra Nakhon Si Ayutthaya
- 5 Nonthaburi
- 6 Songkhla
- 7 Sing Buri
- 8 Nakhon Pathom
- 9 Rayong
- 10 Samut Prakan
- 11 Samut Songkhram
- 12 Phetchaburi
- 13 Chon Buri
- 14 Lamphun
- 15 Chumphon
- 16 Phang-nga
- 17 Prachin Buri
- 18 Phrae
- 19 Trat
- 20 Satun
- 21 Saraburi
- 22 Ang Thong
- 23 Nakhon Nayok
- 24 Samut Sakhon
- 25 Trang
- 26 Nan
- 27 Phayao
- 28 Lampang
- 29 Chachoengsao
- 30 Chanthaburi
- 31 Prachuap Khiri Khan
- 32 Maha Sarakham
- 33 Uttaradit
- 34 Loei
- 35 Surat Thani
- 36 Yala
- 37 Ratchaburi
- 38 Phatthalung
- 39 Chai Nat
- 40 Lop Buri
- 41 Suphan Buri
- 42 Nakhon Ratchasima
- 43 Kanchanaburi
- 44 Udon Thani
- 45 Krabi
- 46 Nakhon Si Thammarat
- 47 Khon Kaen
- 48 Yasothon
- 49 Phitsanulok
- 50 Sa Kaeo
- 51 Amnat Charoen
- 52 Kalasin
- 53 Mukdahan
- 54 Ranong
- 55 Nakhon Sawan
- 56 Roi Et
- 57 Nong Khai
- 58 Ubon Ratchathani
- 59 Phichit
- 60 Uthai Thani
- 61 Pattani
- 62 Sukhothai
- 63 Chiang Mai
- 64 Sakon Nakhon
- 65 Chiang Rai
- 66 Buri Ram
- 67 Nong Bua Lam Phu
- 68 Phetchabun
- 69 Nakhon Phanom
- 70 Chaiyaphum
- 71 Narathiwat
- 72 Si Sa Ket
- 73 Kamphaeng Phet
- 74 Surin
- 75 Tak
- 76 Mae Hong Son



**Table 1.2 Human Achievement Index**

Top Ten Provinces	Bottom Ten Provinces
1. Phuket (South)	67. Nong Bua Lam Phu (Northeast)
2. Bangkok	68. Phetchabun (North)
3. Pathum Thani (Bangkok Vicinity)	69. Nakhon Phanom (Northeast)
4. Ayutthaya (Centre)	70. Chaiyaphum (Northeast)
5. Nonthaburi (Bangkok Vicinity)	71. Narathiwat (South)
6. Songkhla (South)	72. Si Sa Ket (Northeast)
7. Sing Buri (Centre)	73. Kamphaeng Phet (North)
8. Nakhon Pathom (Bangkok Vicinity)	74. Surin (Northeast)
9. Rayong (East)	75. Tak (North)
10. Samut Prakan (Bangkok Vicinity)	76. Mae Hong Son (North)

Overall, the HAI highlights the pattern of disparity that has persisted over decades. People in Bangkok, Bangkok Vicinity and other regional growth areas enjoy higher levels of human development than people in more isolated provinces. The North and the Northeast, as well as a few provinces in the deep South, are placed at much lower levels.

What follows is a broad sweep across these eight dimensions of human achievement, highlighting progress, disparities and challenges for each.

### Health

In general, Thai people enjoy relatively good health. Life expectancy has risen steadily to reach 68 years for men and 75 for women. Most people now have access to health care, especially since the government implemented a scheme of low-cost universal services four years ago, which in November 2006 became free of charge.

But three kinds of problems still remain. First, disadvantaged groups remain vulnerable, either because of poverty or special conditions such as old age or disability. Second, several new and not-so-new health threats come with social change and globalization. These include bird flu, obesity, alcohol usage and the continuing grip of HIV/AIDS. Third, the distribution of health services is uneven.

- **Malnutrition and poor maternal and child health** still affect some areas. Eight percent of under-five children are malnourished. For every 1,000 births, 24 die in infancy and another 28 before the age of five. The maternal mortality rate was 13.7 per 100,000 live births in 2003. Maternal mortality was worst in the remote mountainous North (37 in Chiang Mai, 36.5 in Tak) and the far South (41.8 in Pattani, 30.8 in Narathiwat).
- There are an estimated 1.1 million people with **disabilities** who have difficulty accessing education, employment, income and other benefits.<sup>3</sup> Males outnumber females, and the incidence among the rural population is double that among the urban population. People in the Northeast, the South and the North have higher percentages of disability at 2.4, 1.9 and 1.8 percent respectively, compared with 0.7 and 1 percent among those in Bangkok and Bangkok Vicinity.
- The number of **elderly** persons is rapidly increasing. In 2000, 9.5 percent of the population was 60 years or older, and the proportion will reach 11.7 percent in 2011. At present, 70 percent of people aged 60–69 are suffering from chronic diseases.
- In 2005, 11.7 percent of males and 21.7 percent of females reported some degree of **physical illness**. The rate was highest in the North and the Northeast, and lowest in Bangkok and Bangkok Vicinity.

<sup>3</sup> There is difficulty over the definition of disability. Using a different definition, a survey conducted by the Health Systems Research Institute and the Thai Health Research Institute in 1991–1992 estimated disability among the Thai population at 8.1 percent.

- People are facing **new kinds of health problems**. Child obesity affects 8 percent of those aged 6–14. Between 2003 and 2005, 22 people were affected by bird flu, 14 died, and over 63 million poultry were destroyed. In 2001, psychiatric illness affected 519.6 per 100,000 population, and anxiety affected 776 per 100,000.
- In 2003, **traffic accidents** accounted for 56.9 deaths per 100,000 population.
- Over 600,000 people are living with **HIV/AIDS**. The epidemic has for many years been the number one killer in Thailand. Although yearly new infections keep falling, and more and more people are gaining access to life-prolonging treatment, the epidemic is evolving and there is risk of a major comeback. HIV infections among some vulnerable groups are on the rise. The situation is acute in Ranong (a fishery centre), Phuket (a tourism hub in the South), and large, industrialized urban areas where migration (mainly internal) is high such as Rayong, Ayutthaya, Chachoengsao, Lamphun, and Samut Prakan.
- More people have unhealthy lifestyles, especially poor diet, smoking and drinking. In 2004, out of 16 million **alcohol** consumers, 9.5 percent admitted to drinking every day. In 2001, Thais consumed 8.47 litres of alcohol per person per year. Spirits are more popular than beer and wine, and the World Health Organization (WHO) reports that Thais have the dubious honour of being the fifth largest consumers of spirits in the world.
- **Smoking** results in chronic illnesses that take away many healthy years of a person's life. The number of smokers dropped slightly from 25.5 percent in 2001 to 23 percent in 2004. Smoking is more prevalent among the rural population at 25.5 percent.
- Distribution of the **health infrastructure** is highly imbalanced. Health personnel continue to be concentrated in Bangkok and urban areas. Bangkok has one doctor per every 879 persons, compared to one doctor per every 7,466 persons in the Northeast and 4,534 persons in the North. In Bangkok, the population per hospital bed ratio is 1 to 224, compared to 1 to 747 in the Northeast and 1 to 503 in the North. Those in the rural areas should be credited for being able to hold up the standard of service under these circumstances.

### Box 1.1 HAI Health Index

The **HAI Health Index** is constructed from data on underweight births, disability and/or chronic illness, physical illness, AIDS incidence, mental illness, unhealthy behaviour, and physicians per population.

Bangkok, Bangkok Vicinity, the East, the South and the Centre are better off than the rest of the country. Although health infrastructure is worst in the Northeast, signs of health problems are strongest in the North.

Top Five Provinces	Bottom Five Provinces
1. Yala (South)	72. Kamphaeng Phet (North)
2. Pathum Thani (Bangkok Vicinity)	73. Chaiyaphum (Northeast)
3. Pattani (South)	74. Khon Kaen (Northeast)
4. Phang-nga (South)	75. Lamphun (North)
5. Satun (South)	76. Chiang Rai (North)

## Education

Thanks to the nine-year compulsory education law and other factors, more children enrol in school, and more stay longer. In 2005, people had an average of 8.5 years of schooling, an increase from 7.6 in 2002.

But there remain questions about differential access, the quality of education, the education level of the workforce, and the mismatch between education and the labour market.

- While almost all students from households in the top income quintile now complete nine years of education, only 80 percent in the bottom quintile do.
  - Students perform poorly in school especially in mathematics and science. Thai secondary students perform as well on average as students in countries of a similar economic level, but have very few in the top proficiency levels, and rather larger numbers below a minimal acceptable standard: 40–50 percent in the case of mathematics.
- Performance varies significantly by household income and by location.
- Although enrolment in secondary education has increased over the past decade, the impact has not yet reached the workforce. Those with education above primary level accounted for 39.4 percent of the workforce in 2005, below the target of 50 percent. Lack of skills and low labour productivity are important obstacles to enhancing Thailand's competitiveness. Even more importantly, workers themselves are disadvantaged. With appropriate education and training, they would have better jobs, better pay and better lives.
  - The top fifth of the population by income receives over half of all public spending on higher education. Higher education has expanded at the expense of vocational education, which is the type most needed by industry.

### Box 1.2 HAI Education Index

*The HAI Education Index is constructed from data on mean years of schooling, upper secondary and vocational enrolment, lower secondary test scores, and lower secondary students per classroom.*

Access to education, and its equality, is still variable across the country. Bangkok outperforms the rest of the country, followed by Bangkok Vicinity, the Centre, the East and the South. Northeastern provinces lag behind.

Top Five Provinces	Bottom Five Provinces
1. Bangkok	72. Sa Kaeo (East)
2. Sing Buri (Centre)	73. Nong Bua Lam Phu (Northeast)
3. Nan (North)	74. Chaiyaphum (Northeast)
4. Phuket (South)	75. Narathiwat (South)
5. Chonburi (East)	76. Phetchabun (North)

## Employment

Most people have work. With the continued economic recovery, **unemployment** dropped to 1.3 percent and underemployment to 1.7 percent of the workforce in 2005. **Female participation** in the workforce dropped slightly but still remains high. While unemployment was relatively higher in Bangkok and the Centre, underemployment was high in selected provinces of the South.

The provision of **social security** has expanded. At present, 8.5 million workers in the formal sector enjoy benefits that cover injuries and illness, maternity, disability, death, child support, old-age pension and unemployment benefits.

But there remain issues about social security provision for the large numbers in the informal sector, and about the high rate of work-related injuries.

- Around 22–23 million people working in the **informal sector** have no social security protection except access to the universal health care scheme. The Government is committed to extending social security to this large group, but the scheme needs to

be carefully designed to ensure fairness and sustainability.

- An important challenge is **occupational safety**. The number of work-related injuries in the formal sector is daunting. In 2004, 215,534 workers were victims of work-related injuries, including 861 deaths, 23 permanent disabilities, and 3,775 cases of body part loss. Samut Prakan and Samut Sakhon in the industrial ring around Bangkok held the worst records. Those in the informal sector – farm, construction and home-based workers – are likely to face a more serious situation due to lack of knowledge, training, and legal protection.
- A major threat is **agricultural pesticides**. In 2004, Thailand imported 86,905 tonnes of pesticide, almost double the previous year. Agricultural workers are the most severely impacted. In 2002, the Department of Disease Control reported illness from agricultural pesticide at 4.11 per 100,000 population, and the Department of Health found that 29.4 percent of a sample of 115,105 farmers had dangerous levels of toxins from exposure to agricultural pesticides.

### Box 1.3 HAI Employment Index

The **HAI Employment Index** is constructed from data on unemployment, underemployment, social security coverage and occupational injuries.

The situation of employment and social security is better in Bangkok, Bangkok Vicinity and the East compared with the rest of the country. Phang-nga is worst-off due to high underemployment and high occupational injuries related to the tsunami in late 2004. Samut Prakan and Samut Sakhon rank very well owing to exceptionally high employment, low underemployment and high social security coverage, despite their poor record in occupational injuries.

Top Five Provinces	Bottom Five Provinces
1. Samut Prakan (Bangkok Vicinity)	72. Nakhon Si Thammarat (South)
2. Ayutthaya (Centre)	73. Sing Buri (Centre)
3. Samut Sakhon (Bangkok Vicinity)	74. Chai Nat (Centre)
4. Pathum Thani (Bangkok Vicinity)	75. Kamphaeng Phet (North)
5. Bangkok	76. Phang-nga (South)

## Income, poverty and debt

Household incomes have risen in line with the economic recovery, and reached an average of 14,963 Baht per month in 2004. However, a significant number still live in absolute poverty, while debt has increased alarmingly, and the overall distribution of income remains uneven.

- In 2004, 7 million people or 11.3 percent of the population lived in **absolute poverty**, having income less than 1,242 Baht per person per month.<sup>4</sup> Eighty-seven percent of the poor are farmers and farm workers in the rural areas.
- **Poverty levels** differ greatly by region. The proportion in poverty is less than 2 percent in Bangkok, and just above 5 percent in the Centre, but it is 16 percent in the North, and over 17 percent in the Northeast. In Narathiwat and Pattani, two predominantly Muslim provinces in the far South, the proportions are 18 and 23 percent respectively.
- An average household spends 88.5 percent of its income on consumption, with very little left for investment and savings. **Personal savings** dropped from 13.4 percent of income in 1999 to 6.3 percent in 2003.
- From 1996 to 2004, the proportion of **indebted households** increased from half to two-thirds. The highest proportion was found in the Northeast where 78.7 percent of households were indebted.
- The average amount of **household debt** has ballooned – from around 68,000 Baht in 2000 to 104,571 Baht in 2004. In Bangkok, the Centre, and the East, the majority of debt is for housing, land mortgage or business loans, while in the Northeast it is for consumption.
- **Income inequality** remains high. The top fifth of the population enjoys 55.2 percent of the total income, while the bottom fifth has just 4.3 percent.

### Box 1.4 HAI Income Index

The **HAI Income Index** is constructed from data on household income, poverty incidence and household debt.

The Income Index is one of the most skewed. Bangkok and Bangkok Vicinity outpace the other regions. Runners up are the East, the West, the Centre and the South. The Northeast takes the bottom rank, slightly below the North.

Top Five Provinces	Bottom Five Provinces
1. Bangkok	72. Buri Ram (Northeast)
2. Nonthaburi (Bangkok Vicinity)	73. Nakhon Phanom (Northeast)
3. Samut Sakhon (Bangkok Vicinity)	74. Mae Hong Son (North)
4. Samut Prakan (Bangkok Vicinity)	75. Nong Bua Lam Phu (Northeast)
5. Phuket (South)	76. Surin (Northeast)

<sup>4</sup> Due to change in the methodology, poverty incidence increased from 6.2 million or 10 percent of the population in 2003.

### Box 1.5 Migrants: Low human development

Since the mid-1970s, Thailand has hosted hundreds of thousands of persons displaced by conflict, political instability and social turmoil in the region. Some 140,000 displaced persons still live in camps along Thailand's western border with Myanmar. In recent years, the largest flow has been people coming mostly from Lao PDR, Cambodia and Myanmar for work. Due to Thailand's rapid economic growth and shortfalls in its national labour force, these migrants are an integral part of Thailand's labour market.

In 2004, the Ministry of Interior registered 1,280,920 migrants from Lao PDR, Cambodia and Myanmar. In 2006, some 700,098 of these registered for work permits with the Ministry of Labour for a fee of 3,800 Baht per person including health insurance cover.

According to estimates, there may be another 1.5 million migrants who are not counted in any official government figures.

As these migrants are not included in official statistics, very little is known about their health, education level, income and living condition, other than the research and observations by development agencies who work with migrants. According to this information, migrants earn lower wages, suffer worse living conditions, and have poorer health than the rest of the population. Most migrants have only basic or no education, and many migrant children do not attend school.

Those who registered with the Ministry of Interior in 2004 and subsequently obtained work permits are legally entitled to access social and health services and are, in principle, covered by the same labour legislation as Thai nationals. But in practice, many migrants cannot make use of these services. Development agencies are working with both the government and migrants to improve access.

All migrants are vulnerable to abuse and exploitation because they are not integrated into Thai society and often do not speak Thai. The 1.5 million unregistered migrants are the most vulnerable as they lack any personal security and can be arrested and deported at any time.

Migrant women and children are especially at risk. The 2004 registration recorded 93,000 migrant children under the age of 15. Including the unregistered families would more than double this figure. Although these children are entitled to attend school, many cannot. Children newly born to migrants in Thailand are not issued proper registration documents, creating a generation of stateless children.

While Thailand recognizes the need for migrants and the importance of ensuring their human security and well being, existing policies are not consistently applied and often do not achieve their objectives. The lack of accurate data about the location, living and working conditions of migrants is also a serious constraint to achieving effective migration policies that will benefit everyone.

Source: International Organization for Migration

## Housing and living environment

Three-fourths of Thai households live in their own house on their own land. The percentage is higher in the rural than urban areas. Ninety-nine percent of households have safe sanitation, drinking water, and electricity in the dwelling. A high proportion also has basic household appliances such as refrigerators, and electric or gas stoves.

However there are growing problems which are related to environmental deterioration. Natural disasters are on the increase, and more people are affected by pollution.

- **Natural disasters** have increased in frequency and severity. In 2004, 70 provinces were threatened by drought while 50 encountered floods. The most disastrous blow was dealt by the tsunami of December 2004 which affected the six southern provinces.
- **Water quality** has deteriorated. The problem is most acute in the Centre where only a small part of community, agricultural and industrial discharge is properly treated. Water quality is also critical in the inner part of the Gulf of Thailand with consequences for the livelihoods of coastal fishing communities.
- **Waste management** has not been able to keep pace with rapid development. In 2003, there were 1.8 million tonnes of hazardous waste. Only 44 percent of industrial hazardous waste was treated, and only 19.4 percent of municipal waste was recycled.
- **Pollution** is another threat. The number of complaints logged at the Pollution Control Department was 848 in 2005, compared with 435 in 2000. Two-thirds were from Bangkok and the Bangkok Vicinity and most concerned foul smell, dust and smoke, and waste water.

### Box 1.6 HAI Housing and Living Environment Index

The **HAI Housing and Living Environment Index** is constructed from data on housing security, possession of basic appliances, e.g. refrigerator and electric or gas stove, exposure to flood and/or drought, and pollution.

The Centre is the best performer, followed by the West, East and South. The North, the Northeast and Bangkok Vicinity trail behind.

Top Five Provinces	Bottom Five Provinces
1. Ang Thong (Centre)	72. Samut Sakhon (Bangkok Vicinity)
2. Sing Buri (Centre)	73. Surin (Northeast)
3. Lampang (North)	74. Tak (North)
4. Lamphun (North)	75. Ranong (South)
5. Phetchaburi (West)	76. Mae Hong Son (North)

### Family and community life

Family and community are the basic building blocks of Thai society. Family relationships in general remain strong, and communities have strong traditions of cooperation. But today these institutions face increasing strains.

At present, most **elderly persons** are still looked after within the family. In 2002, out of 6 million elderly, only 6.3 percent lived alone. But this pattern will change as the proportion of elderly increases.

More immediate are the problems created by migration. Many families are scattered because of migration in search of work. The number of single-headed households is on the rise. Communities continue to be concerned over drug abuse and crime.

- In 2004, **female-headed households** accounted for 29.8 percent of all households in the country. In some cases, this reflects women's economic and social freedom, but in most cases it is a result of family breakdown. It places a heavy burden on many women who are alone in trying to make ends meet and raise children.
- 24.3 percent of all **households were headed by the elderly**. A large number of them are vulnerable to poverty, and children in these households are likely to miss learning and education opportunities enjoyed by other children.
- 18.5 percent of children aged 15–17 were active in the labour force in 2005, a drop from 21.6 percent in 2001. These **children work to support their family**, in most cases at the expense of their further education.
- In the southernmost provinces, people suffer from intense **insecurity** and disruption of normal livelihoods due to the recent escalation of conflict.
- **Violent crimes and drug problems** have a significant effect not only on community safety, but also family life. In recent years, drug and drug suppression became a major issue in many communities, with mixed results. In 2005, violent crimes were highest in the South at 37 per 100,000 population and lowest in the Northeast at 5 per 100,000 population. Drug-related arrests were highest in Bangkok, Bangkok Vicinity and the East at 534, 302 and 321 per 100,000 population respectively.

#### Box 1.7 HAI Family and Community Life Index

The **HAI Family and Community Life Index** is constructed from data on orphans/abandoned children/children affected by AIDS, working children, single-headed households, elderly living alone, violent crimes, and drug-related arrests.

Family and community life is best in the Northeast, followed by Bangkok Vicinity. Other regions are approximately at the same level.

Top Five Provinces	Bottom Five Provinces
1. Nong Bua Lam Phu (Northeast)	72. Ang Thong (Centre)
2. Pathum Thani (Bangkok Vicinity)	73. Phatthalung (South)
3. Khon Kaen (Northeast)	74. Chon Buri (East)
4. Loei (Northeast)	75. Chiang Rai (North)
5. Udon Thani (Northeast)	76. Narathiwat (South)



### Box 1.8 The tsunami: A devastating blow to human development

The Indian Ocean tsunami on 26 December 2004 delivered a hard blow to human development. In Thailand, over 8,200 people were killed, including nearly 2,500 foreign nationals from 37 countries. Over 400 fishing villages along the Andaman coast of southern Thailand were seriously affected, nearly 50 of them completely destroyed. Well over 100,000 people in the fishing and tourism sectors lost their means of livelihood. About 8,000 boats and nearly 5,000 houses were destroyed or badly damaged. Tourism in the six tsunami-affected provinces dropped by more than 50 percent in the first half of 2005. The overall cost of the relief and rehabilitation topped USD 1 billion and the disaster may have reduced overall GDP growth in 2005 by 0.5 to 1.5 percent.

The tsunami also had a serious impact on the natural environment, with marine and coastal national parks severely damaged, coral reefs destroyed by debris, and agricultural land affected by salt water intrusion. This environmental damage has had serious long-term impacts on the tourism industry and people's livelihoods.

From a human development perspective, the tsunami taught Thailand some tough lessons.

- *Needs of vulnerable communities and groups.* Poorer communities, especially Muslim and Sea Gypsy fishing communities, were disproportionately hard hit by the tsunami and are still having difficulties recovering from the disaster. Likewise thousands of migrant workers were displaced and lost their jobs, without adequate support from authorities.
- *Local governance.* Stronger community voice and participation in local governance and in the planning and implementation of rehabilitation programmes, inadequate at the start, turned out to be of critical importance to achieving a recovery that will be sustainable over the long term.
- *Land rights.* The tsunami greatly exacerbated existing problems over land rights, with disputes erupting between local communities, private developers, national park authorities and local governments. More than 100 villages reported land rights problems, and Sea Gypsy communities who live on "prime real estate" along the shoreline were especially affected. This problem turned out to be a major obstacle to the recovery.
- *Oil prices.* Though unrelated to the tsunami itself, the recent doubling of the cost of petrol has further undermined the viability of small-scale fishing activities in the tsunami-affected areas.
- *Long-term trauma.* Last but not least, post-disaster trauma is making it hard for some people to get back on their feet and local support services are proving inadequate.

## Transportation and communication

The provision of transport and communication infrastructure is generally good in the country. The road network is very extensive. Over 93 percent of households have television. The use of mobile phones, computers and the Internet has spread.

However, the wide provision of these facilities also results in risks and dangers.

- **Road safety** is a growing issue as traffic accidents are now among the top three causes of death. In 2003, 56.9 per 100,000 population died in accidents, with traffic accidents as the largest subcategory.
- **Television** is the most popular means to receive news and important information. But

quality educational and entertainment programmes constitute only a small part of the programme content. News programmes are accused of being politically biased and soap operas of perpetuating gender stereotypes and condoning violence against women.

- **Mobile phone and other ICT devices** have rapidly penetrated Thai society. In 2005, 36.7 percent of the population 6 years or older used a mobile phone, 24.5 percent used a computer and 12 percent used the Internet. But access to these new technologies is very skewed. More than 25 percent of people in Bangkok have access to the Internet, compared to 12 percent in the North, 10 percent in the South and 8 percent in the Northeast.

### Box 1.9 HAI Transportation and Communication Index

*The HAI Transportation and Communication Index is constructed from data on road access, road condition, vehicle registration, road length, land traffic accidents, TV, mobile phone and Internet.*

A huge gap exists in the provision of transportation and communication. Bangkok is ahead of the rest of the country by a wide margin, followed by Bangkok Vicinity. The other regions are approximately at the same level, with the Northeast lagging a little behind.

Top Five Provinces	Bottom Five Provinces
1. Bangkok	72. Chaiyaphum (Northeast)
2. Phuket (South)	73. Tak (North)
3. Nonthaburi (Bangkok Vicinity)	74. Surin (Northeast)
4. Sing Buri (Centre)	75. Si Sa Ket (Northeast)
5. Rayong (East)	76. Mae Hong Son (North)

### Box 1.10 Human development and the crisis in Thailand's far South

Since early 2004, Thailand's far South has been beset by violence. Individual killings, arson, or bombings occur on an almost daily basis. Larger incidents erupt every few weeks. The death toll now exceeds 1,500 people.

The three southernmost provinces of Pattani, Yala and Narathiwat have long been among the poorest provinces in Thailand. Over recent years, they have been slipping backwards against the national average. In 1990, the proportion below the poverty line in these three provinces was roughly on par with provinces in the Northeast, once considered the poorest region. By 2000, the proportion in the far south was a third more than in the Northeast. Some believe this decline in the South is a result of government neglect, and that this is one reason underlying the violence.

Human development is suffering. Since the previous HAI Index, compiled in 2003, all three provinces have lowered rankings – Pattani from 53rd to 61st, Yala from 15th to 36th, and Narathiwat from 51st to 71st. The provision of health, housing and transport is better than might be expected. But in terms of education, employment, family life and community participation, these provinces are slipping further behind.

With the current violence, the local economy is crumbling and delivery of government services is decaying further. Schools are literally under attack from sporadic arson and assassination of teachers. Many schools have closed, either temporarily or permanently.

A recent UNICEF study highlighted trends of major concern in these three provinces:

- In recent years, the decline in poverty incidence has slowed, and even reversed in some areas. Poverty in Narathiwat is 18 percent and in Pattani 23 percent, more than double the national average.
- Many families have lost their major earner, and 11 percent of women are widows (though not all due to the violence).
- Infant mortality rate in the southern border provinces nearly doubled from 5.95 to 11.16 per 1,000 live births during 1996–2002.
- The maternal mortality rate is around three times the national average (29.8 per live births in Yala, 48.5 per live births in Pattani and 30.5 in Narathiwat, compared with the 12.9 national average in 2001) – a fact that may be correlated to insecure water supply and poor sanitation.
- Birth weight is 16 percent below the national average, and cases of stunted growth more prevalent.
- HIV/AIDS has made a late but threatening appearance, probably through drug use in fishing communities, and its extent may be masked by cultural sensitivity and government inaction.
- Local *pondok* schools compensate somewhat for the problems in the mainstream schooling system. Yet the numbers completing secondary schooling are low in comparison to the national average, and this will translate into poorer prospects for employment.
- Migration away from the violent areas is adding to the problem of social dislocation and fragmentation of families.

Restoring peace in this region is a burning priority. Investing in human development will make that peace sustainable.

## Participation

Political participation has increased remarkably, especially with the decentralization of administration and the increase in the number of elective bodies. Voting at general elections is technically compulsory but the penalties are not stringent, so the high and rising turnouts at the polls in 2001 (70 percent) and 2005 (72.5 percent) are a real measure of political interest. There is no significant difference in the level of voter turnout across the country, though the Northeast is slightly lower than other regions.

In addition to voting, **political awareness, political participation and the exercise of rights** have taken several forms. People have explored new grounds and gained experience in political rallies, mass petitions, and constitutional debates. They have scored some successes in taking rights-based and other important issues to the Administrative Court and the Constitutional Court.

Underpinning the active political participation is the strengthening of **community organizations**. The number of community groups per population was highest in the

Northeast, the South and the North (89, 84, 81 per 100,000 population respectively in 2005), and lowest in Bangkok (8 per 100,000 population). The same pattern is observed in the level of participation in local groups and community services.

One major fault in this picture concerns the representation of women.

- At the 2005 polls, 10.6 percent of elected MPs were women. This is the highest proportion ever in Thailand, but still pitifully low.
- The problem begins with political parties. Only 10.8 percent of constituency candidates were women. On the party list, a national vote by party, the proportion of women was higher (28.6 percent) but their position on these ranked lists was generally low so that only 6 of the 100 elected were women.
- Women are also under-represented in local government. In 2004, women accounted for 4.8 percent of the members on provincial councils, 6.6 percent on municipalities, and 6.7 percent on sub-district administrative organizations.<sup>5</sup>

### Box 1.11 HAI Participation Index

The **HAI Participation Index** is constructed from data on voter turnout, community groups, participation in local groups, and participation in social services.

The Northeast is the leader, followed by the North, and the South. Participation is lowest in Bangkok and Bangkok Vicinity.

Top Five Provinces	Bottom Five Provinces
1. Amnat Charoen (Northeast)	72. Chon Buri (East)
2. Maha Sarakham (Northeast)	73. Pathum Thani (Bangkok Vicinity)
3. Lamphun (North)	74. Bangkok
4. Phang-nga (South)	75. Nonthaburi (Bangkok Vicinity)
5. Chumphon (South)	76. Samut Sakhon (Bangkok Vicinity)

<sup>5</sup> See UNDP, *Women's Right to a Political Voice in Thailand*, 2006.

## Conclusion: Progress with imbalance and growing risks

In general, the progress on human development in Thailand is good. But on closer examination, there are serious questions about the evenness, balance and sustainability of this trend.

The inequality in access to public goods such as education, health, and social services is relatively high for a country at this level of development. In particular, the contrast between urban and rural areas, and the formal and informal sectors is great. Gender is also a factor. Women play a large role in the economy, but are still largely excluded from political roles, and as a result still lack important rights and their interests remain neglected. Geography matters. Certain regions are still slipping behind the overall trend.

Other problems are being created as by-products of growth. Families and communities are under strain, particularly as a result of migration. The deterioration of the environment creates problems of livelihood, pollution, and natural disasters. Road accidents, safety at work, dangerous use of agricultural pesticides, HIV/AIDS, and the threat of new epidemic diseases all pose increasing threats to the opportunity to live long and healthy lives.

The uneven balance and emerging new threats are products of Thailand's long-term trend of growth and development. It is against this same background that King Bhumibol evolved his thinking on the Sufficiency Economy.





2

## Thinking out the Sufficiency Economy

# Thinking out the Sufficiency Economy

On 4 December 1997, King Bhumibol Adulyadej made his usual birthday address to a nationwide television audience. The contents were anything but usual.

*Recently, so many projects have been implemented, so many factories have been built, that it was thought Thailand would become a little tiger, and then a big tiger. People were crazy about becoming a tiger...*

*Being a tiger is not important. The important thing for us is to have a sufficient economy. A sufficient economy means to have enough to support ourselves...*

*It doesn't have to be complete, not even half, perhaps just a quarter, then we can survive...*

*Those who like modern economics may not appreciate this. But we have to take a careful step backwards.*

*(Dusit Palace, 4 December 1997)*

This speech was remarkable in many ways. Monarchs these days rarely comment on their country's economic direction. Here the King seemed to advise retreat from a strategy that had been hailed as a great success. For 40 years, Thailand's economy had grown at an average of 7.6 percent a year, one of the fastest in the world. Four years earlier, in 1993, the World Bank had portrayed Thailand as a leading player in the second wave of the "East Asian Miracle." An American development economist with long experience in Thailand, R. Muscat, had already christened the country as the "Fifth Tiger." Here the King seemed to dismiss these ambitions as hubris.

Still, the speech could be taken as just one person's words going against the grain, were it not for the reaction.

The press recounted the key sections of the speech at much greater length than normal. Extracts were constantly rerun as inter-programme fillers on television and radio. Quotations appeared on billboards outside government offices. The whole speech was quickly printed and distributed. Key phrases immediately entered popular debate across the country, from the campus to the village.

The Ministry of the Interior adopted the principle of sufficiency, launched into a major programme to educate its own personnel on its meaning, and earmarked a large slice of its budget for programmes on the theme. The Royal Thai Army embraced the sufficiency principle and began planting rice plots for military consumption. Political parties in both the ruling coalition and the opposition espoused the king's ideas, as did several leading monks and many prominent social commentators. In 1999, the National Economic and Social Development Board (NESDB) adopted the King's idea as the guiding principle for the next five-year development plan, and the country's leading economic think tank, the Thai Development Research Institute (TDRI), selected it as the theme for its prestigious annual conference.

Although the King's ideas always command respect, this reaction went beyond the usual. A major reason was obviously the economic crisis that had struck in July 1997, five months before the speech. Since then foreign capital had fled the country, the currency had plummeted, massive numbers of companies had become technically bankrupt, consumer spending had dropped by a fifth, over two million had lost their jobs, and the economy was shrinking at a rate far faster than it had ever grown.



The King's speech touched a chord with all who were disadvantaged, dismayed and disoriented by this unprecedented shock. Yet the crisis alone cannot explain the speech's appeal. After the economy recovered three years later and again began to deliver growth rates envied by most of the world, the interest in the King's ideas continued to spread. More government agencies, community organizations, educational institutions, rural networks, and businesses found inspiration and practical applications in the King's ideas. As the 1997 crisis approaches its tenth anniversary, this trend continues.

The King's speech in 1997 gave his ideas on a Sufficiency Economy a much broader audience than ever before. But the thinking behind the speech had begun much earlier. His ideas developed in response to problems created in the course of Thailand's rapid development.

The King was not alone in wrestling with these issues. In Thailand, a host of thinkers in villages, schools, non-government organizations (NGOs), research institutes, religious centres, government departments and universities offered ideas on how to adjust the trend of development to place more emphasis on sustainability and human benefits. And, of course, Thailand was only one part of a developing world confronting issues that were increasingly similar under the unifying tendencies of globalization. This era saw many new theories, techniques and development approaches proposed for worldwide application.

What gave King Bhumibol's thinking its special character was its practicality and its viewpoint. He looked at development from the angle of the ordinary people, and considered the structures of market, national economy and world economy as more remote and ultimately secondary in evaluating the success or failure.

This chapter traces the evolution of the King's thinking for a period of over 40 years of practical experiments. Then it looks at how these ideas have been codified to facilitate application by more people in more situations. Finally it shows how the thinking fits into a broader intellectual context.

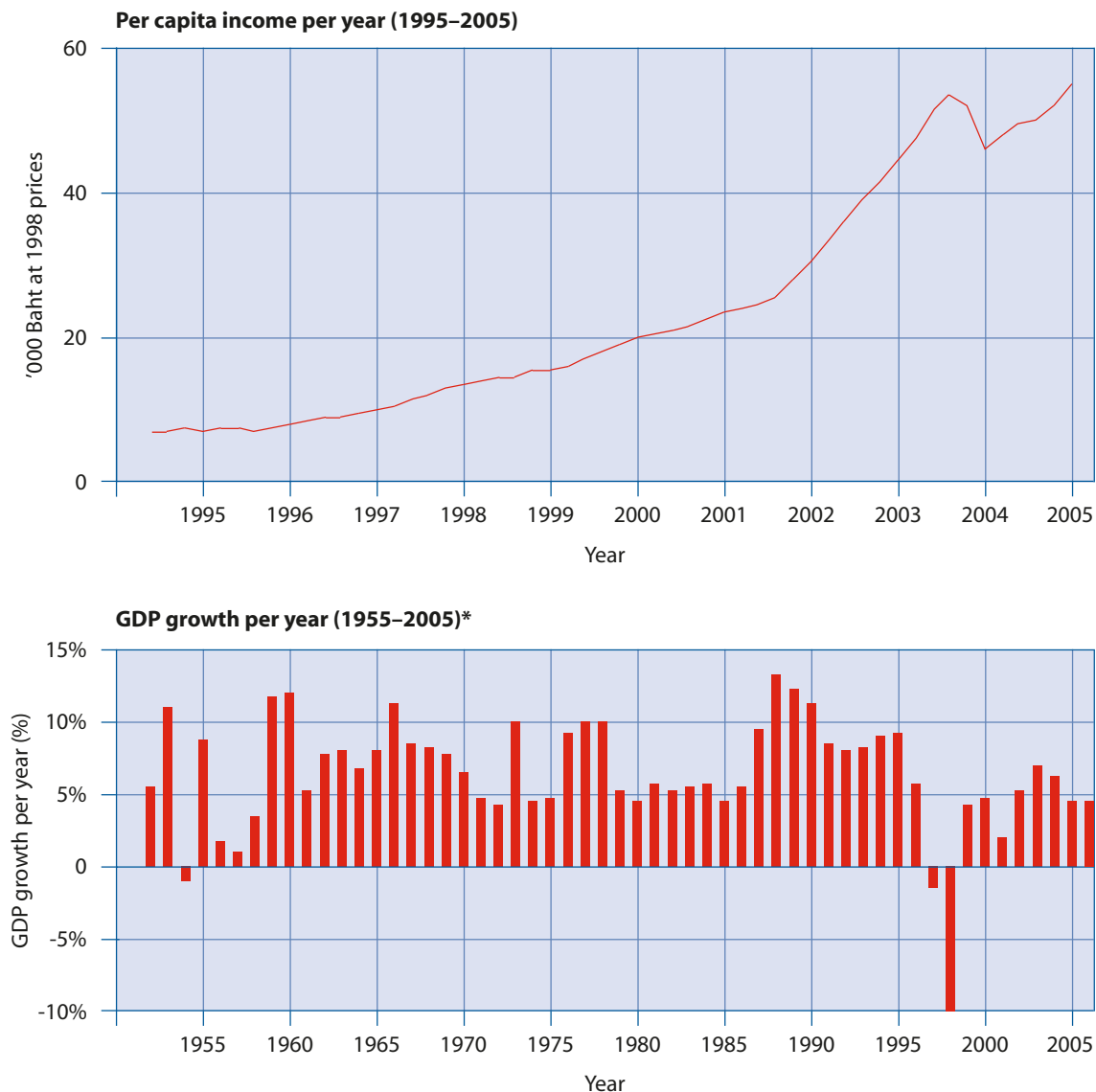
## Thailand's development...

Half a century ago, Thailand was still predominantly rural and underdeveloped, even in comparison to its Asian neighbours. Per capita income was a little over US\$ 200 a year. Exports were almost all primary products of rice, tin and teak. The urban economy was minuscule.

Development began in the Cold War era with help and encouragement from the United States. In the first stage, which began in the late 1950s and lasted until the 1980s, growth was powered by exports of agricultural products. Investments in infrastructure of ports and roads connected formerly remote areas of the country to the world market. Development planners and entrepreneurs combined to bring in new crops, new techniques and new technologies for processing and transport. Vast areas of land were cleared for new cultivation. Provincial towns sprouted processing factories, storage yards and transport companies.

The second stage, which began in the 1970s, inserted Thailand into global chains of industrial production. Laws, taxes and policies were changed to promote export-oriented industrialization and attract more foreign investment. New infrastructure including airports, ports, power generation, roads and waste control were built to service industry. Foreign investment from the United States swelled in the 1970s, and then was surpassed by much larger flows from East Asia from the mid 1980s onwards. Manufacturing exports overtook agricultural exports in 1985. In the early 1990s, a new Japanese factory opened in Thailand every three days, and around one million people were converted from agriculture to an urban job every year.

The development plans that helped spark this process prioritized growth, and in their own terms they were spectacularly successful. From 1957 to the 1997 crisis, Thailand's real Gross Domestic Product (GDP) growth averaged 7.6 percent a year, and never once dropped below 4 percent. Per capita income multiplied over seven times (see Figure 2.1).

**Figure 2.1 Per capita income and Gross Domestic Product growth**

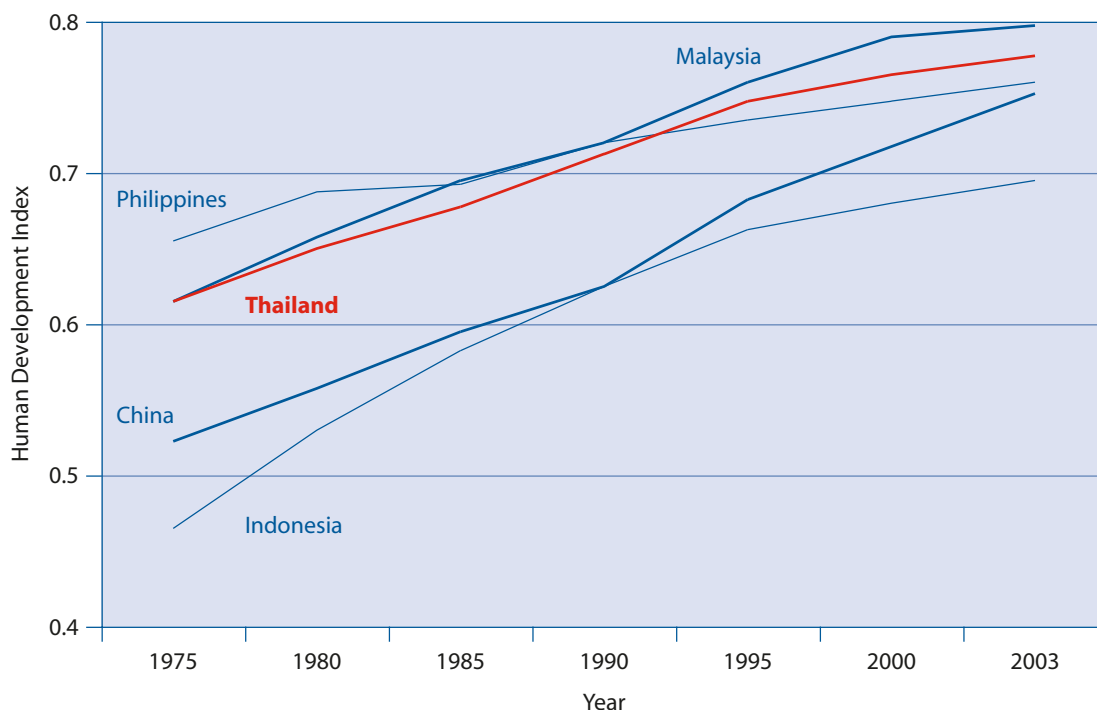
\* 2006 GDP growth figure second quarter.

Source: NESDB GDP Tables

The planners relied on growth to trickle down through society, and here again their strategy seemed vindicated. The proportion in poverty dropped from 57 percent in 1962 to 11 percent in 2004. Life expectancy lengthened. Health care improved. More people gained some education.

In 1975, Thailand's score, measured by UNDP's Human Development Index (HDI), was relatively good compared to other countries at a similar income level, and over the next two decades the score continued to move upwards (see Figure 2.2). There were many reasons to hail Thailand's development in this era as a success.

Figure 2.2 Human Development Index, 1975-2003

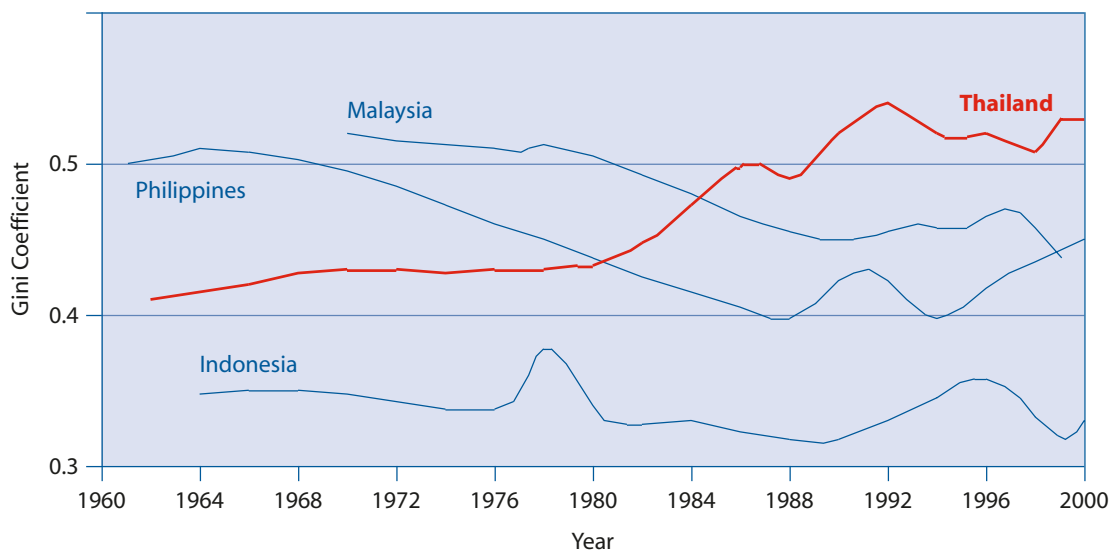


Source: UNDP Human Development Report 2006

But there were qualifications. Here we will highlight four, though the list could easily be extended. The first three are well-known. They are growing inequality, negative environmental impact and breakdowns in the family and community. The fourth – a growing malaise over loss of control over life and future – needs more explanation as it is less well-understood, but still important to the evolution of the Sufficiency Economy thinking.

**Inequality.** Theory and observation suggest that in developing countries incomes will initially become more unequal, but later this trend will reverse. Yet, over a span of 40 years, inequality in Thailand has relentlessly gotten worse (see Figure 2.3). Minor improvements in the last few years have not been adequate to signify a change in trend. Even compared to Thailand's neighbouring countries with rather similar economies, the contrast is very striking.

Figure 2.3 Trends in inequality (Gini Coefficient), 1960-2000



Source: Australian National University

There are many causes. Government spending has been very unevenly distributed. Education policy has prioritized tertiary above secondary, and education subsidies have helped the rich more than the poor.

But the major reason for growing inequality is the differing fate of the urban and rural economies. Over the long term, agricultural prices have fallen drastically. A farmer wanting to buy a motorcycle with sacks of rice would need four times as many in 2000 compared to 40 years earlier.

Since the government began to focus development on industry, investment in support of agriculture has declined. The structure of power and the crisis over the environment have denied people access to land, water and forest resources that are fundamental to their livelihood. For many farmers, export-oriented cash crops became steadily less profitable and market volatility easily tipped them into debt.

**Environmental decline.** Thailand went from being one of the most resource-abundant areas of the planet to being resource-constrained over the space of one generation. The causes were the pace and rapacity of growth, and the almost total failure to impose any controls. The starkest symbol of this process is forest cover. Between 1947 and 2000, two thirds of Thailand's forests disappeared. There is data from 2000 suggesting that Thailand had 33 percent forest cover. But this

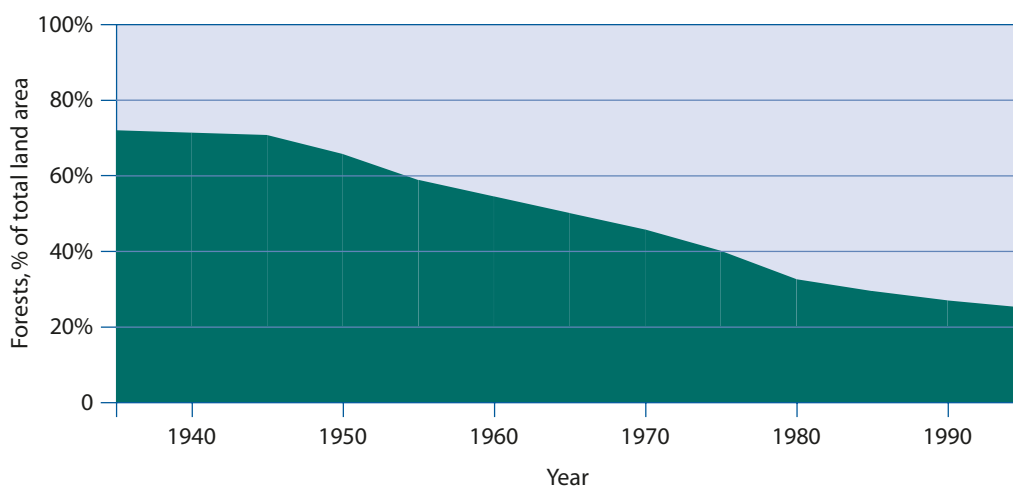
figure is under debate. It is unclear whether the increase is due to technical changes in reading and interpreting data from satellite images rather than from any actual gain in forest cover.

Equally important has been the rising pressure on water resources, as escalating urban use has led to competition over a fixed supply. Now any year of low rainfall creates a battle between rural and urban consumers of water, while any year of high rainfall brings floods and deadly landslides caused by the decline in forest cover.

These are only the most visible and immediate causes of Thailand's environmental decline. There are also problems over waste disposal, urban pollution, declining marine stocks, and many other matters.

**Social toll.** The basic building blocks of local society have taken a terrible beating. Old customs of shared labour and other forms of local exchange disappeared within a couple of decades of the intensifying of market agriculture. As the income from agriculture declined and the demand for urban labour increased, more and more rural families survived by sending their youth to the city (or overseas) from where they could remit some supplementary income. Families are scattered by migration. Village populations are hollowed out, with mainly young and old, and few of working age. Many children are brought up seeing their parents only for occasional visits.

**Figure 2.4 Forest cover, percentage of total land area, 1935-1995**



Source: Royal Forestry Department

**Loss of control.** The technologies and techniques for Thailand's development came from outside in, and from top down. This was new. Although Thailand's rice export economy had expanded greatly over the previous century, the increase was achieved by more intensive and extensive use of local technology. But from the 1950s onwards, expansion depended more and more on demand, technology, capital and techniques that came from elsewhere. After new transport networks connected the villages through Bangkok to the outside world, goods and information flowed along this route more easily than it flowed between the villages and their neighbours, or between Thailand and its neighbours. With the coming of the electronic age, communication was even more skewed in this pattern.

People became involved in production systems over which they had little control because they were receivers of the knowledge on which these systems were based. This placed them at risk. They were often tempted into new investments in the hope of higher gain, but ill-equipped to manage the shifts of price and demand that were a regular feature of the world market.

Rural debt rose relentlessly through the development era. A major part of the King's 1997 speech on the Sufficiency Economy consisted of tales about ambitious projects which had crashed, and individuals who had fallen hopelessly into debt because of incautious investments. These stories served as a parable for the country's vulnerability to the 1997 crisis owing to the size of foreign debt. But they also conveyed a simpler, more human lesson about what was happening to many ordinary people.

Besides the material vulnerability to risk and fluctuation, there was also a growing mental anxiety of becoming victim of economic and social forces beyond local control. In the past, the major threats to the local economy were things like variations in rainfall and the havoc caused by wild animals. Villagers had their own systems of insurance and defence to deal with such matters and, whether effective or not, they were the product of local wisdom. But in the new era, world prices replaced rainfall as the source of insecurity, and market forces supplanted wild animals as the predators. In 1997, the countryside was caught up in an international crisis that was caused by financial flows determined in distant markets and government decisions in the capital.

A sense of powerlessness to organize life, production, family, future and community became a major source of anxiety and discontent.

## ...and the reaction

Rising concern over the destructive, divisive, unsustainable and disempowering by-products of growth fuelled debate from the late 1960s onwards. In parts of the country, this discontent prompted support for a communist insurgency for almost 20 years. Other reactions sought solutions that were more peaceful and more local, but just as revolutionary in their own way. The thinking came from farmers, local wise men, monks, development workers, officials, teachers, academics and philosophers.

Several major themes ran through this discourse of discontent, including:

- rebuild a sense of community, real or imagined, in order to have greater strength to face up to global forces;
- retreat somewhat towards self-reliance in order to withstand shocks;
- draw on Buddhism with its stress on moderation and spiritual well-being as an antidote to the emphasis on maximizing growth and consumption;
- build horizontal networks to pool thinking and share techniques.

These themes spawned a wealth of new ideas including rice banks, cattle banks, micro-saving schemes, community forest projects and self-reliant mixed farms. Growing numbers of NGOs helped to articulate and transmit these ideas across new national networks. Books, articles and sermons organized the new thinking in more systematic forms.

By the 1990s, there was a strengthening lobby to translate this thinking into a major shift in national development policy. This lobby had some influence on the seventh five-year plan which debuted in 1992, but even more on the eighth five-year plan in 1997. The prologue to this plan ended its overview of the past 35 years with a succinct and damning conclusion: economy, good; society, problematic; development, unsustainable.

The eighth five-year plan promised to take "a first step towards ... achieving the long-term vision of an ideal Thai society" by "shifting from growth orientation to people-centred development." The main focus was on development of human resources through education, health care and social welfare; equitable sharing through regionalization, participation and community rights; and rehabilitation of the environment through better management and greater local participation.

But within months of the plan's launch, the 1997 crisis had struck and the government's emphasis shifted from long-term visions to short-term survival.

### From Royal Projects...

From very early in the development era, King Bhumibol seems to have sensed that small farmers, who constituted the majority of Thailand's population, would be neglected by the adopted strategy of development, and would end up as its victims.

The King began experimental agricultural projects in the grounds of the Chitlada Palace in Bangkok. These included fisheries, new crop varieties, and dairy schemes. The emphasis was on finding technologies and techniques which were appropriate for Thailand's typical smallholder.

In the early 1950s, the King was driving across a coastal mudflat when his jeep got stuck, and had to be pulled out by local villagers. He conceived the idea that a simple dam could turn this tidal marsh into a lake useful to the local villagers for fish-raising, irrigation, and drinking water. The Khao Tao project was completed in 1953 and counts as the first of the Royal Projects related to agriculture (see Box 2.1).

Over the following years, royal tours around the country increased the number of Royal Projects in all regions. Many of these were small-scale irrigation projects designed to overcome the shortage of water and unreliability of the rainfall. Others focused on the introduction of new crops or cultivation techniques that suited the local ecology and were appropriate for the small farmer; environmental conservation through low-technology or natural means; rain-making; reforestation; health care for remote communities; and various local infrastructure schemes. In addition, Queen Sirikit took special interest in projects of craft production to supplement household income.

By around 1980, these Royal Projects had reached a significant scale. The government seconded several officials with technical expertise, especially in irrigation, to cope with the workload. Six centres were built in different regions of the country to continue experimental work and to disseminate the learnings that had accumulated.

The Royal Projects were immensely varied. But one key focus of many of them was to

strengthen the individual family farm, and thereby the community, by reducing the family's reliance on fickle rainfall, a limited range of crops and subservience to a volatile market.

### ...to royal advice

From the beginning of this interest in rural development, the King broadcast his thinking and learnings in the speeches he gave at university graduation ceremonies. He pointed out the importance of agriculture to the national economy.

*Thailand's economy mostly depends on agriculture. Thus you must always bear this fact in mind, and help our country's farmers to prosper and progress quickly.*

*(Kasetsart University, 18 April 1960)*

He began to question the over-emphasis on economic growth, and to suggest ways to bring the human aspect of development to the foreground.

*One thing being strongly promoted at present is increase in production, in the belief that production is the source of income. Everybody should be able to see without difficulty that production is related to demand, distribution, business organization, as well as the extraction of income and profit to be used for consumption. Thus the correct approach to increasing production is not through application of agricultural techniques to increase the value of production for its own sake. Rather agricultural and other techniques should be applied to help the producer to receive returns for the labour, thinking, and capital he has used in full measure, so he can use those returns to raise his standard of living to a more secure level.*

*(Kasetsart University, 18 July 1974)*

He argued for a more circumspect approach to development in which ordinary people could participate and progress with less risk of disaster.

*Development of the country must proceed in stages. First of all, there must be a foundation with the majority of the people having enough to live on by using methods and equipment which are economical but technically correct as well. When such a secure foundation is adequately ready and operational, then it can be gradually expanded and developed to raise prosperity and the economic standard to a higher level by stages.*

*It is especially important to first build a foundation in which people have an occupation and the ability to make a living, as those who have an occupation and a reliable living can then progress upwards to higher levels of prosperity. The promotion of progress must proceed in stages with care, economy, and foresight to prevent mistakes and disasters... if one focuses only on rapid economic expansion without making sure that such a plan is appropriate for our people and the condition of our country, it will inevitably result in various imbalances and eventually end up as failure or crisis as found in other countries.*

*(Khon Kaen University, 20 December 1973; Dusit Palace, 4 December 1974)*

*Economic and social conditions in many countries have changed; that is a great deal of effort is harnessed to construct advanced technology and great efficiency in the production process leading to the rapid increase in products to the level of luxury. At the same time unemployment increased because machinery has taken away jobs from humans. This caused economic downturn as the unemployed became poorer and the producers of goods went bankrupt because they were not able to sell their products. Thus theoretical and practical adjustment to industrial development ought to be promoted to create a balance in other sectors in order to survive.*

*(King Mongkut Institute of Technology, 18 October 1975)*

He wondered about the growing enthusiasm for industrialization on a world scale.

### **Box 2.1 The Royal Projects, the Developer King**

From the early years of his reign, the King involved himself in projects addressing disaster relief, education and health. He launched projects to combat tuberculosis, cholera, polio, iodine deficiency and leprosy, and supported several schemes for formal and informal education.

Over time, more of his interest focused on agriculture and rural development. He travelled constantly around the country to launch projects. In his words, "In working out a programme to help people, it is necessary to know the people that you intend to help."

The Royal Projects now number over 3,000 scattered the length and breadth of the country.

The Royal Project Foundation, begun in 1969, has concentrated on replacing opium with cultivation of strawberries, apples, grapes, and many other fruits and vegetables. The Chai Pattana Foundation, begun in 1988, raises public donations for over 3,000 projects which range from scientific research to sinking wells. The King has patented several mechanical aerators to clean polluted water, and developed artificial rain-making techniques which are now also used in neighbouring countries.

Recently, experienced representatives of the Royal Projects have been invited to Timor-Leste to promote sustainable development and to Afghanistan to help replace opium with other crops.

Perhaps the nation's most familiar image of their monarch is of a man with a camera around his neck and a map in his hand, striding along the ridge of a muddy field, explaining possible technical improvements to attentive officials. The Developer King.

## Self-reliant agriculture

From 1986, the Thai economy boomed, being spurred on by the opening of the economy to wider global impulses. In his speeches of this era, the King often gently expressed his misgivings about unmonitored growth. Just as this rise neared its peak, he surprised many by announcing a scheme that seemed to contradict Thailand's formula for miraculous growth.

In 1994, the King unveiled a model of a self-reliant family farm. He had begun experimenting with the model on a small plot in Saraburi province a few years earlier, just as the boom began. The model was based on a 2.4 hectare holding which was the median for smallholders in much of the country.<sup>6</sup> This was divided into four zones: 30 percent for digging a pond to store 19,000 cubic metres of water for cultivation in the dry season and to raise fish; 30 percent for rice cultivation sufficient for year-round home consumption; 30 percent for other crops and fruit; and 10 percent for housing, animal husbandry and other activities. Soil fertilization, weed control and pest control used natural methods. The production system maximized synergies between livestock and crops, and made the household self-reliant. The King stressed that this was a basic model which could be easily modified to different regions where soil, water and cropping conditions varied.

At one level this model was simply a rational response to what had happened to Thai agriculture over the past generation. It avoided the chemical-dependent monoculture that was often no longer profitable and placed the farmer at the mercy of market uncertainties. It overcame the growing difficulties with water supplies. It provided a secure living. It recognized that the market did not work efficiently for small farmers because of high transaction costs including transport and vulnerability to exploitation. But the King admitted that this model "was not easy to implement, because the one who uses it must have perseverance and endurance."

At first sight, this model farm might appear as a rejection of the market, but this was far from the case. Self-reliance did not mean isolation. The model farm was expected to create a

surplus beyond household consumption, and this surplus could be exchanged on the local market. Moreover, the model farm was only the first of a three-stage approach.

The second stage aimed at creating self-reliance at the community level by increasing the production and availability of local goods and services through mobilizing the surplus resources of households within a community. This might be done through cooperative forms of production, community savings groups, community health centres and community forms of a social safety net. The idea was to increase the local provision of goods and services by introducing some division of labour to achieve economies of scale and scope, while still relying principally on the community's own capacity and resources. Exchange with the outside would increase, but local exchange should be preferred because it economizes on transport and other transaction costs.

At the third stage, the community could engage with the economy beyond the village to sell its excess products; to gain new technology and resources for projects, such as founding its own rice mill; to tap the services of banks and other economic institutions; and to negotiate with business corporations for mutual advantage.

Although the King presented this theory as just these three stages, the implication was for a staged progression towards an ever broader and more complex economy. As he later said,

*Progress is not just about planting enough rice to eat. There must be enough to create schools, even works of art, so that Thailand prospers in every way, with no hunger or poverty, food for body and soul, and many other things.*

*(Dusit Palace, December 2003)*

The important message of the theory was the King's conclusions about how to achieve real development with real benefits for ordinary people. Progress had to be achieved in stages. Before moving to another stage, there first had to be a firm foundation of self-reliance or else there was a strong chance of failure and loss of independence. The driving force for development had to come from within, based on accumulation of knowledge. In summary: *Self-reliance. Moderation. Resilience. Inner dynamic. Knowledge.*

<sup>6</sup> In Thailand, the thinking represented by the model farm was dubbed *thitsadi mai*, the New Theory. Here this name is not used for fear of giving the impression that the New Theory is different from the Sufficiency Economy, whereas actually it is one application of it.



## Crisis and Sufficiency

When the economic crisis struck Thailand in 1997, many people interpreted it as punishment for the country living beyond its means. In pursuit of ever more rapid growth, Thailand had gone deeply into debt, had invested in many projects that were clearly inappropriate, and had allowed speculative markets in stocks and property to run riot.

The speeches given by the King in the two years following the crisis extended the thinking on the agricultural theory to a much wider canvas. But the guiding principles remained the same. Work in stages. Build a base of self-reliance before moving ahead. Be economical. Learn continuously.

*A self-sufficient economy doesn't mean that each family must produce its own food, weave and sew its own clothes. This is going too far, but I mean that each village or district must have relative self-sufficiency. Things that are produced in surplus can be sold, but should be sold in the same region, not too far so that the transportation cost is minimized.*

(Dusit Palace, 4 December 1997)

*I may add that full sufficiency is impossible. If a family or even a village wants to employ a full sufficiency economy, it would be like returning to the Stone Age...*

*This sufficiency means to have enough to live on. Sufficiency means to lead a reasonably comfortable life, without excess, or overindulgence in luxury, but enough. Some things may seem to be extravagant, but if it brings happiness, it is permissible as long as it is within the means of the individual ...*

*Some people translate 'sufficiency' from the English as: to stand on one's own feet ... This means standing on our own two legs planted on the ground, so we can remain without falling over, and without asking others to lend us their legs to stand on...*

*If everyone has enough to live on, everything will be all right. Furthermore, if the whole country can subsist, the better it would be.*

(Dusit Palace, 4 December 1998)

The principles which the King was expounding were the same as those found in the staged model of rural development – only now applied to the national economy. A foundation of self-reliance is the best immunity against external shocks. Development has to proceed in stages.

Dynamism has to come from inside. Thailand would need to edge backwards a bit to get growth back on track.

In these speeches, the key word was “sufficiency,” and in 1998 the King gave the approach the title of the “Sufficiency Economy” in English.

The term was too easily confused with self-sufficiency in the sense of total self-reliance and rejection of the market. The King corrected this misapprehension:

*... self-sufficiency is not a Sufficiency Economy, but a Stone Age Economy ... There must be some gradual development, some exchange and cooperation between districts, provinces, and countries, something beyond sufficiency. So a Sufficiency Economy for one quarter is enough.*

(Dusit Palace, 4 December 1999)

The approach was also interpreted as a total rejection of globalization. But the King himself corrected this misunderstanding:

*As we are in the globalization era, we also have to conform to the world.*

(Dusit Palace, 4 December 1997)

## Clarifying and codifying

After the King's words on this subject had gained an enthusiastic reception during 1999–2000, a working group studied all the King's statements on the subject, and drew up a definition which the King himself approved.

*The Sufficiency Economy is an approach to life and conduct which is applicable at every level from the individual through the family and community to the management and development of the nation.*

*It promotes a middle path, especially in developing the economy to keep up with the world in the era of globalization.*

*Sufficiency has three components: moderation; wisdom or insight; and the need for built-in resilience against the risks which arise from internal or external change. In addition, the application of theories in planning and implementation requires great care and good judgement at every stage.*

*At the same time, all members of the nation – especially officials, intellectuals, and business people – need to develop their commitment*

to the importance of knowledge, integrity, and honesty, and to conduct their lives with perseverance, toleration, wisdom, and insight, so that the country has the strength and balance to respond to the rapid and widespread changes in economy, society, environment, and culture in the outside world.

Another working group then condensed the approach down to three components, which it defined as: moderation; reasonableness; and the need to have a self-immunity system.

**Moderation or พอประมาณ [pho praman]** is closely linked to the idea of sufficiency. In Thai as in English, the word for sufficiency (*pho phiang*) has two meanings: enough in the sense of not too little, and enough in the sense of not too much. It conveys the idea of a middle way between want and extravagance, between backwardness and impossible dreams. It implies both self-reliance and frugality.

**Reasonableness or มีเหตุผล [mi het phon]** means both evaluating the reasons for any action, and understanding its full consequences – not only on oneself, but on others, the society, and the environment; and not only in the short term, but the long also. This idea of reasonableness thus includes accumulated knowledge and experience, along with the analytic capability, self-awareness, foresight, compassion and empathy.

**Self-immunity or ภูมิคุ้มกันในตัว [phumikhum kan nai tua]** means having built-in resilience, and the ability to withstand shocks, to adjust to external change, and to cope with events that are unpredictable or uncontrollable. It implies a foundation of self-reliance, as well as self-discipline.

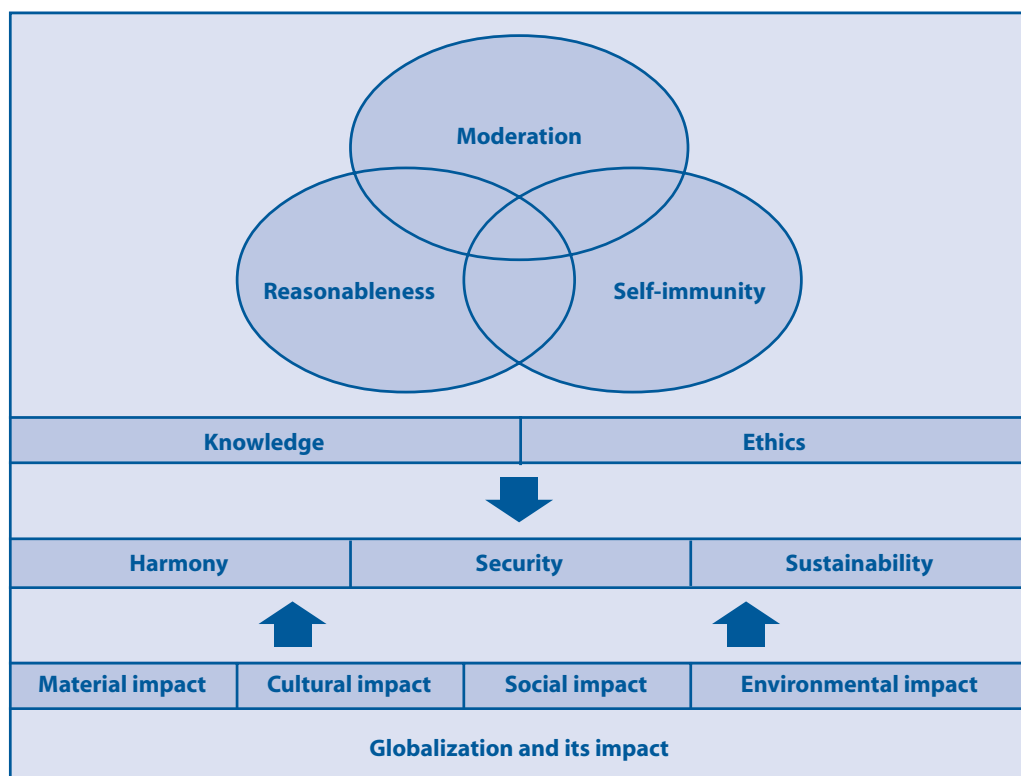
Besides these three components, two other conditions are needed to make the principle of Sufficiency Economy work: knowledge and integrity.

**Knowledge or ความรู้ [khvam ru]** means something close to wisdom in English as it encompasses accumulating information with the insight to understand its meaning and the care or prudence needed to put it to use.

**Integrity or คุณธรรม [khunatham]** means virtue, ethical behaviour, honesty and straightforwardness, but also tolerance, perseverance, a readiness to work hard and a refusal to exploit others.

These elements clearly overlap and interlock. Reasonableness indicates moderation. Moderation builds self-immunity. Self-immunity is a requisite for reasonableness. They are not separate items but a trio. Graphically they can be shown as overlapping spheres (see Figure 2.5).

**Figure 2.5 Sufficiency Economy and globalization**



“The sufficiency economy philosophy will be followed as a shared value by the Thai people, guiding the transformation to a new national management system based on efficiency, quality of life, and sustainability objectives.” Thailand’s Ninth Plan, 1997

Simplified, this codification of the King’s ideas boils down to five basic maxims:

- know what you’re doing
- be honest and persevere
- take a middle path, avoiding extremes
- be sensible and insightful in taking decisions
- build protection against shocks

### Scope and application

As such, the King’s thinking is not really an “economy” or an “economic theory” but a guide to conducting life and taking decisions that can be applied to an individual, household, community, project, business, nation or the whole world.

At the most basic level, the approach is a guide to individual, everyday conduct. At a broader level, it serves as a national mission statement. The approach implies that economics (or any other social science) cannot be separated from more fundamental issues of epistemology and ethics – how we know things and how we act.

It is also not a theory that needs to supplant competitive theories, but is a way of thinking that can be incorporated into any number of disciplines and theoretical approaches.

Thai economists quickly grasped that embracing the Sufficiency Economy does not require them to abandon the theories and techniques they used as their professional tools (see Box 2.2).

In terms of the economy, the Sufficiency Economy emphasizes the importance of shielding the country and its people against shocks. Just as the agricultural theory that stresses that communities need a base of strength and self-reliance to be able to deal with the world beyond the community, so a country needs a strong internal foundation to survive and prosper in a volatile world-wide economy.

The Sufficiency Economy is not a rejection of globalization, but rather of means of succeeding in globalization.

### Philosophical foundations

There is another level in the Sufficiency Economy thinking that challenges the framework of conventional economics. This aspect is closely related to Buddhist ways of thinking, but is not exclusive to any religion or culture as the logic is built around simple concepts of man and the world.

In Buddhism, the world is a place of suffering. By being born in this world, humans encounter suffering. But the message of Buddha is that each person has the ability to overcome this suffering by developing the mental ability to understand it, and eventually to rise above it. People have to do this themselves. There is no outside help that offers a short cut. Happiness is the conquest of suffering by the human mind.

Conventional economics is built around the idea of people’s self-interest; that people try to maximize their own benefits, including consumption; and that the market sorts out the resulting conflicts in an even-handed way.

From a Buddhist perspective, this makes no sense. There is no evidence that maximizing consumption beyond a certain point results in an increase in happiness. Indeed wealth tends to bring anxiety. The competition to acquire ever more leads to conflict, as well as wasting finite resources. There is also no evidence that the market is even-handed in settling competition, so the result tends to include inequality, exploitation and unhappiness.

In the Buddhist view, attempts to achieve selfishly motivated ends only cultivate selfishness, and efforts to fulfil desire only foster desire. But selfishness is not inevitable or incurable because every person has the capacity to change. Humans may indeed start out as self-interested, but they have the ability to overcome that. Rather than imagining economics as a competition, it makes more sense to find ways to overcome the selfishness which leads to competition – such as by teaching people that there are other people in the world, and that it is better to treat them with empathy, compassion, fairness and generosity. With this approach, people care about other people, and the economy works more harmoniously too.

### Box 2.2 Sufficiency and Thailand's economists

In late 1999, many of Thailand's top economists gathered to discuss the King's thinking. They agreed that the Sufficiency Economy was not incompatible with mainstream economics because it accepted trade and globalization, and because it embraced an idea of optimization. In many different ways, they found that the King's approach was useful both in understanding what had drawn Thailand into the 1997 crisis, and in formulating more appropriate policies for the future.

They concluded that the country had clearly ignored moderation by indulging in over-consumption, which reduced the volume of savings and increased the reliance on foreign debt.

Corporations had ignored the need for immunity by carelessly favouring debt financing over equity and failing to insure themselves against volatility. Governments had failed to display reasonableness by creating incentives favouring large-scale, capital-intensive ventures that matched badly with Thailand's resource endowment. Policy-makers had failed to build a foundation of self-reliance by drawing too heavily on foreign capital and technology rather than investing in research and development (R&D) within Thailand. The lack of publicly available information on economic issues meant there was no general knowledge to stem the slide into the crisis.

Looking ahead, the economists concluded that the need for immunity meant developing warning systems to anticipate volatility in the international market, introducing better risk management in corporations, strengthening financial institutions through good governance, and using a flexible exchange rate and inflation targeted for discipline in macro-management.

A better foundation of sufficiency and self-reliance would require measures to raise the savings rate, and more investment in R&D. More information needed to be made public to provide the knowledge to plan and make decisions. Moderation would require a better incentive system designed to create an optimal level of competition, and give more space to small and medium enterprises rather than big companies.

The economists seemed especially pleased to find that the King's ideas were a useful approach to the issue of resource allocation at the heart of the economic discipline. On the one hand, economics taught that a more complex division of labour delivered higher efficiency, and efficiency was the basis for success in a competitive world. On the other hand, real-world experience showed that countries needed a degree of self-reliance because they could not predict the shocks of the globalized era.

The King's ideas provided a framework for thinking about the balance between efficiency and growth on the one hand, and security and stability on the other.

Although this line of thinking is explicit in Buddhism, it is closely paralleled in other religions' ideas of morality, charity, love, giving and sharing (see Box 2.3).

Understanding this background in Buddhist thought gives another layer of depth to the key concepts of the Sufficiency Economy – moderation, reasonableness and self-immunity.

Buddhist teaching advises people to avoid extremes. Eating too much can damage the body, and so can eating too little. The optimal point is somewhere in-between. This is the middle way, or moderation. Learning how to seek and find this point is a form of wisdom.

As the King said,

*Sufficiency is moderation. If one is moderate in one's desires, one will have less craving. If one has less craving, one will take less advantage of others. If all nations hold this concept ... without being extreme or insatiable in one's desires, the world will be a happier place. Being moderate does not mean to be too strictly frugal; luxurious items are permissible, but one should not take advantage of others in the fulfilment of one's desires. Moderation, in other words, living within one's means, should dictate all actions. Act in moderation, speak in moderation; that is, be moderate in all activities.*

*(Dusit Palace, 4 December 1998)*

The “reasonableness” in the Sufficiency Economy is unlike the “rationality” of people who may pursue their self-interests to maximize their benefits. The word in Thai (*mi het phon*) captures the interrelationship between the means and the ends, motive and result. Reasonableness is the ability to identify a goal that is moderate and optimal rather than extreme, as well as the ability to appreciate how the pursuit of that goal will impact on others. Pursuing self-interest is not reasonable because it can result in conflict rather than happiness. Reason needs to be used with insight and compassion; then the result is wisdom rather than selfish “rationality.” As the King said,

*I want everyone to bear in mind the law of cause and effect. A result arises because of a cause, an action. Whether that result is good or bad depends on whether the action was good or bad. So to achieve any aim, you first have to study what is the appropriate means, and then proceed according to the law of causation with honesty and determination. Then everyone’s work will have a good outcome, and taken together will result in the desired progress and security of our country.*  
(Chulalongkorn University, 9 July 1970)

### Box 2.3 Sufficiency and religion

As the Sufficiency Economy approach has appeared in a mainly Buddhist society, it is no surprise that it draws on Buddhist thinking, and uses some Buddhist terminology, especially the middle path.

But it is not an exclusive product of Buddhism. In Thailand, some of the most enthusiastic supporters of the approach include Muslims, and one prominent exponent of similar ideas is a Catholic priest.

Many religions teach that greed and selfishness are wrong, and celebrate the virtues of giving, sharing and compassion. Christianity promotes charity. Islam teaches every true adherent the duty of giving alms. Many religions also reward asceticism. The monastic ideal remains an important element in Christianity. The month of fasting in Islam serves as a regular reminder of the value of self-denial. Hinduism encourages everyone to practice abstinence at some level ranging from a short fast to complete withdrawal from the world.

These celebrations of asceticism are reminders of the dangers of greed and the exploitation of others. In many different religions, the teachings are critical of consumerism, encouraging the ideals of asceticism and giving. Also in various different religious settings, ideals of asceticism or self-restraint are the foundations of movements towards greater self-reliance in both material and spiritual ways.

On the outskirts of Bangkok, there is a Muslim settlement that has become a prominent example of a sufficiency community – not at the basic stage, but at a more advanced level. The community has moved rapidly away from self-reliant agriculture over the past generation, as land has become scarce, and the community members have been drawn into the urban economy of Bangkok. But the community has consciously immunized itself against the potential damage from such rapid change. The community contributions demanded by Islamic belief have been invested in social capital to cope with this new situation. These projects include schools, savings funds and provision for the needy. For the community members, Islam and the Sufficiency Economy give them the same advice:

“Islam enjoins us to give – not just alms, but also teaching and advice ... In the Sufficiency Economy, having ‘just enough’ also means giving. The royal thinking is founded in the Muslim philosophy of life. To espouse this Sufficiency Economy we don’t need any instruction. It’s close to our real way of life anyway.”

Father Niphon Thianwihan, a Catholic priest, has been an activist and theorist of community-based development in Thailand for over a quarter-century. He argues that “consciousness-raising in development is the search for the real consciousness of the community in order to stand up to outsiders.” He urges communities to draw on “religious capital” of any type – Buddhist, Christian, Muslim, animist – as a resource in this struggle.

*The happiness and prosperity that people seek can be achieved, but by actions that are ethical in intention and execution, not by chance or by fighting and grabbing from others. True prosperity is something creative because it gives benefit to others and to people in general as well.*

*(Chulalongkorn University, 10 July 1975)*

The need for self-immunity or protection against shocks also reflects the Buddhist understanding that the world is unstable and subject to constant change. The way to deal with this situation is to avoid unnecessary risks, and to develop a firm base of self-reliance in order to be able to withstand shocks.

### Box 2.4 The Sufficiency Economy and humanist economics

Ever since the framework of modern economics was conceived, there have been dissidents who argue for ways to put humanity and true happiness above the economic emphasis on the pursuit of wants, the mechanisms of the market and the overriding priority of growth. In various ways, many of these thinkers have argued that what we would today call “development” must have both material and spiritual dimensions.

One wave of dissidents emerged against the background of industrialization, during the transfer of people from the land to factories, and the replacement of labour by machinery. Simonde de Sismondi (1773–1842) feared industrialization had placed human labour on a par with the operation of machinery, and raised the issue that humans could be discarded once machinery progressed. Sismondi wrote,

“Sufficiency for living is necessary for life and for moral and ethical development in all aspects including the development of human intellect and wisdom. These are things that human beings cannot be without.”

Another wave of humanist thinkers emerged during the era of colonialism. Mahatma Gandhi (1869–1948), the spiritual leader of India’s independence movement, placed great emphasis on self-reliance and simple living as a strategy both for countering colonial domination, and for developing the spirit. He advocated spinning as a meditative means towards mental development as well as a method for opposing colonial domination of the market. In his thinking, the movement against the British, and the quest for inner peace and victory, were inextricably intertwined.

In the early phase of the modern era of globalization, with growing fears over the dehumanizing effects of economic scale, and the impact of man on the planet, E. F. Schumacher (1911–1977) drew inspiration from both Gandhi and Buddhism. In 1973 he famously claimed “small is beautiful” and argued in favour of “appropriate technology” that enabled people to develop without losing their human qualities.

More recently, a new “economics of happiness” has arisen against the background of the spiritual malaise of the modern world. In 1974, Richard Easterlin pointed out that economic growth does not contribute to any increase in happiness once basic needs are fulfilled, and that indeed the pursuit of growth and higher income seems to promote anxiety and envy, especially in societies which are highly unequal. King Jigme Singe Wangchuck of Bhutan decided the pursuit of Gross National Happiness was more important than Gross National Product.

More recently, Richard Layard concluded that “happiness depends on your inner life as much as on your outer circumstances.” Like Schumacher, Layard looked to Buddhism for inspiration on an alternative path, and took away the insights that people are adaptable; that they need to cultivate trust, compassion, and positive thinking to overcome envy; and that society needs to concentrate more on “education of the spirit.”

Jeffrey Sachs welcomed this new emphasis on happiness, but also recalled that the US Declaration of Independence guaranteed a right to *the pursuit of* happiness, not a right to happiness itself. In other words, the definition of happiness is in the domain of the individual. The role of the state is to increase the opportunities for individuals to pursue the happiness they seek.

From this perspective, practising the principles of the Sufficiency Economy is itself a form of learning, a way of developing the mind. At the individual level, each person progresses in stages, building a firm base of self-reliance at each stage, and concentrating on developing inner capability. Similarly, in any application of the Sufficiency Economy, such as the agricultural example from 1994, the project develops in stages, building self-reliance and the ability to withstand shocks at each step, and moving ahead at the pace dictated by the community's inner dynamic. The achievement of personal betterment and social goals are not separate but all part of the same process. Material and mental progress go hand in hand.

Although the Sufficiency Economy and similar humanist approaches (see Box 2.4) reject some principles of conventional economics, they do so in a way that can co-exist within a framework of capitalist economic principles, and offer teachings that provide a moderating influence.

The Sufficiency Economy is based on both practice and principle. On the one hand, the key maxims have arisen from the King's real-world experience in development projects. They are a practical summary of what works, based on decades of experimentation, observation and evaluation.

At the same time, the key ideas of the Sufficiency Economy are firmly rooted in ideas about the nature of the world and the situation of humanity. It is this combination of real-world applicability and philosophical underpinning that gives the approach its strength.

## Sufficiency and human development

The Sufficiency Economy is a natural ally of human development.

Like Human Development, the Sufficiency Economy places humanity at the centre, focuses on well-being rather than wealth, makes sustainability the very core of the thinking, understands the need for human security, and concentrates on building people's capabilities to develop their potential.

But the Sufficiency Economy is not the same as human development. It offers two additional elements.

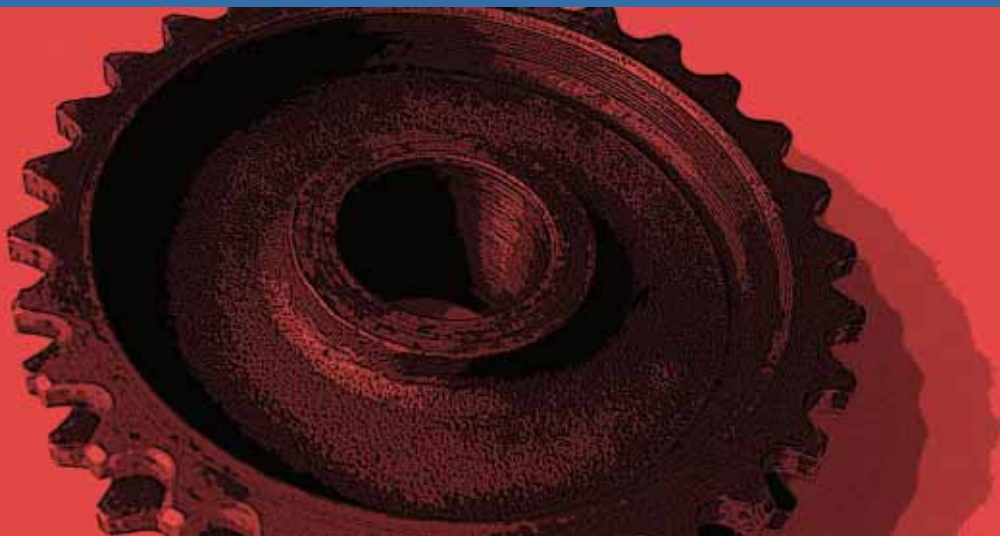
First, the Sufficiency Economy places greater emphasis on mental and spiritual development. Indeed, it contends that mental development is integral to all kinds of development, rather than being a separate sphere.

Second, it offers a guide for making decisions – applicable for the agency, department or government engaged in the use of development resources, and for the individual. It suggests *how to take decisions* that will achieve sustainability, health, longevity, learning, empowerment, well-being and happiness.

In the next chapter, we will look at ways the Sufficiency Economy thinking has been taken up in Thailand in different settings, from the village to the boardroom, from the school to the planning agency.







3

## Sufficiency Economy in Action

# Sufficiency Economy in Action

In this chapter we shall look at several examples of the Sufficiency Economy thinking in practice – in agriculture, environment, education, business and the management of the national economy. These projects are at varying stages. Some began many years ago. Some were started after the King emphasized the Sufficiency Economy approach during the economic crisis. Some are still at the stage of researching and experimenting with ways that the thinking can be applied. Yet all, in different ways, demonstrate how the principles of moderation, insight, resilience, knowledge and integrity can be applied with good results.

Several of the older projects began before the thinking of the Sufficiency Economy was formalized. They were started by people working in the same situation and cultural context that helped to shape the King's thinking. It is not surprising that their direction was similar. In many cases, they were influenced by the King's advice in his birthday speeches and other pronouncements. More recently they have been encouraged by the clearer exposition of the Sufficiency Economy approach.

Agriculture and community development was the cradle for the King's development of the theory, so that is where we will begin.

## Sufficiency in agriculture: The Inpaeng Network

In 1987, a small group of community leaders and local scholars met together in Ban Bua, a village in the hilly region of the far northeast of Thailand, to discuss a major problem: the more they invested in cash-cropping, the deeper they slipped into debt. They took a momentous decision – to stop concentrating on cash-cropping and to prioritize growing their own rice for consumption. From that small beginning grew a network that now includes four provinces, around 900 villages and over 100,000 members. The network's activities include agriculture, community enterprises, health care, environmental conservation and education.

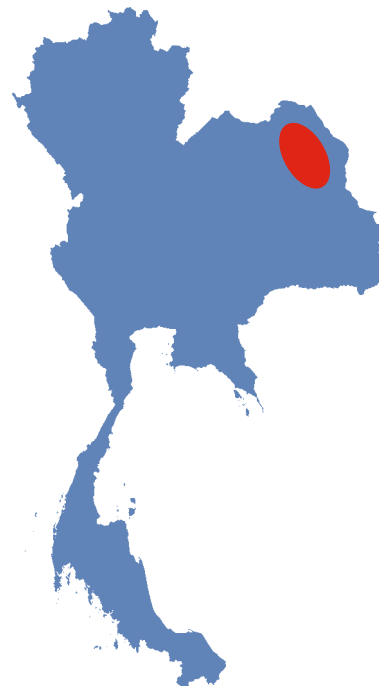
Despite that initial decision to prioritize their own consumption needs, the members of the network now have more complex links with the economy beyond the village. They also have less debt and less anxiety. The network was named by a local scholar as Inpaeng, meaning created by the god Indra, because the forests of the surrounding area seem as rich and beautiful as heaven.

### Taking a first step

A chain of low hills runs through Thailand's far northeast region.

There is little land suitable for farming, and the soil tends to be acid and sandy. In the boom of export cropping from the 1950s onwards, the communities in this area took to planting cassava which was mainly exported to Europe for animal feed. They also relied on the surrounding forests to supply them with food, herbs and many other things to supplement the local economy. The crop yields were low and the communities remained poor. Provinces in this area were among those with the highest incidence of poverty in the country.

**Figure 3.1** Map showing the location of the Inpaeng Network



Over time, the communities' problems increased. Cassava prices dropped in the world market. The quality of the soil declined through constant mono-cropping. Chemical pollution became an added problem as more and more expensive chemical fertilizers and pesticides were used in efforts to sustain the yields. The once rich and beautiful forest began to decline because of logging and because the villagers looked to the forest more and more as a supplementary income source. The financial profit from growing cassava gradually dissolved and debts began to mount.

At the same time, the village became better connected to the outside world through roads, buses, radio and television. New consumer needs added another cause of debt. Some households were tempted by short-term solutions for debt, such as gambling or drug-dealing. Others sent off their sons and daughters to work in Bangkok and other cities as factory labourers, construction workers, house maids, taxi drivers or vendors. Often they left behind the children to be brought up by neighbours or grandparents. Remittances from the cities kept the village economy afloat, but at a cost of families being scattered.

Life in this region has always been tough, and this has bred a strong tradition of community cooperation. The meeting in Ban Bua in 1987 reflected that tradition.

### Stage 1: Grow what we eat and eat what we grow

The community of Ban Bua analysed its situation. Most farmers had to harvest at the same time, resulting in over supply and lower prices. They had to sell quickly before the crop deteriorated and so had little room for bargaining with middlemen. They could not eat their own produce so ended up needing cash to buy food in the market.

They decided that growing cassava no longer made sense – in cash terms, in environmental terms and in social terms. They all decided to stop. Instead they would grow food crops that they could eat themselves and sell in markets nearby.

To supplement the sticky rice, which was the staple of their diet, they sought other local food crops that would not need chemicals for growth or protection. Most households consumed rattan shoots that they were buying from elsewhere. They decided to plant old cassava fields with rattan. An NGO called the Village Foundation gave them 5,000 baht (US\$ 125) to buy seed. The first year's crop earned more than 30,000 baht, six times the investment. They used

part of the profit to set up a small nursery to produce young rattan plants for other farmers who were interested in joining the project. They planted backyard gardens of organic vegetables. Before long the rattan groves yielded many of the products they had earlier gleaned from the forest. This model spread through the original community of Ban Bua and out into neighbouring villages.

Gradually they perfected mixed farms to suit different segments of the local landscape. In the flatter areas, households divided up their plots into rice, fruit trees, ponds to raise fish and frogs, vegetable plots and mushroom nurseries. From experience they learned that the ideal farm grew at least ten kinds of vegetables, five kinds of fruit trees, a few wood trees, and some basic medicinal herbs. It also had at least one fish pond and kept ten chickens or ducks for protein supply. In the sloping areas, households took an agro-forestry approach with plots divided under fruit trees, timber trees and various kinds of plants and herbs, just as in natural forests. Most of these trees and plants were native and grew well in the area.

Within a few years, the villagers cultivated or collected a wide variety of food produce. They had enough for home consumption, for exchanging among themselves, and for selling to neighbouring communities, generally at prices below the market rate. They called this the time of *"Grow what we eat and eat what we grow"*. Their practice matched the first stage of the Sufficiency Economy for agriculture.

Some villagers from the Inpaeng network visited the nearby Phuphan Royal Development Study Centre. Still later, some of the farms that had adopted the King's ideas became demonstration plots for the King's theories. Different strands lead towards a common thread.

### Stage 2: Community enterprises

As the success of the pioneers became better known, the Inpaeng network began to expand. Often other villagers came to visit the pioneer areas in order to learn the new techniques. Later the network leaders began to visit neighbouring areas to explain what they were doing and invite other communities to join. As the network became larger, it served as a market for a growing range of products made by community enterprises.

In their regular discussions, the villagers identified other plants or trees that had the potential to become sources of food and additional income. They went into the forest and made a catalogue of native trees classified

### Box 3.1 From cash crop to agro-forest

Serm Udomna was one of the founders of the Inpaeng network. He had started growing cassava in 1979 on a loan of 5,000 baht, and by 1986, his debt had grown to 30,000 baht. He decided, "We should grow what we can eat and use for our own consumption first. Then we may sell the surplus to our neighbours or process it to add value."

He gradually replaced cash crops with rice, vegetables and fruit trees. On his sloping land, he grew some trees from seed, and brought many other varieties from the nearby Phuphan forest to reproduce the forest's bio-diversity. This idea gained him a reputation. "Serm moved the Phuphan forest to his home."

He soon found he had everything he needed including food, medicinal herbs, timber and firewood for his own family and neighbours.

"I grow everything I want to eat and use in this forest. I don't need chemical fertilizer. In the natural forest there are no chemicals but the trees still grow very well. Trees with deeper roots get their food from deeper down. As they grow, their leaves fall, rot, and become nutrients for smaller trees and plants with shallower roots."

He had a daily income from the produce of his forest, rice field, fish ponds and poultry. After a few years, he stopped growing cash crops completely, and was able to pay back most of his old debts. Now he has about 260 kinds of trees in his forest and plans to increase to 300 kinds in the next two years. He also raises a few cows which he regards as a savings bank. When he needs extra money such as fees for his children's higher education, he sells his cows.

"My life today is much better. My own garden gives me safe food and medicinal plants which keep me healthy and free of sickness. I believe that prevention is the best solution to health care. As they say, you are what you eat."

Other people came to learn from him. His forest became a model widely copied through the Inpaeng network. He bought some more degraded land with plans to turn it into an agro-forest where children of the area could learn the practice.

"It's not an easy job. I know I'll have to work harder. People who don't understand will laugh at me. But I have a strong will to do it. I was born a farmer and I've lived most of my life in this forest area. Besides learning the modern knowledge which they study from schools, I'd like the children to learn how to live in harmony with nature."

according to their utility as food, medicine, firewood or construction materials. They brought back seeds to breed in their nurseries, and distributed young plants for community members to grow in their backyards and integrated farms.

Several groups were established to process the fruits, leaves and roots of these trees into food products and medicines. For example, households pooled their surplus of tamarind and *makmao*, a local herb, to make into juice and wine for sale within the network communities. Local medical knowledge was applied to produce herbal medicines for basic health care. Plants and other local materials were used to make organic fertilizer, insecticide, shampoo, detergent, fish sauce, iodized salt, herbal tea, sausage, vegetable crackers, cooking powder, and other goods to reduce consumption expenditures.

Traditional skills in metalwork and wood carving were revived to manufacture agricultural tools. Weaving and natural dyeing resurfaced. Timber from trees on individual farms, instead of timber from trees from the forest, was used to construct or repair houses and public buildings. Community nurseries were established to supply seeds of fruit trees, wood trees and vegetables. Many households grew flowers and soil coverage plants.

These new production activities greatly helped community members to cut down on consumption expenditure. In some villages, community shops were established as outlets for this produce. Items were sold within the network at prices below market rates.

In this second stage, the range of ideas and products circulating through the network greatly increased. This phase corresponded to

“Walk step by step, eat bite by bite.”  
Northeastern Thai saying.

the second stage of the Sufficiency Economy approach to agriculture, which aims for sufficiency at the community or network level based on cooperative activities across the participating communities. At the same time, some of the products began to be sold in markets further afield both within and beyond the northeastern region.

### Stage 3: Networking for diversity and security

As the network expanded, inter-village organization was needed to help structure production along the pattern of value chains. In the production of *makmao* wine, a few farmer groups prepared young plants in their nurseries, and sold them on to grower groups who raised them in community forests. They then sold the fruit onward to workshops making juice and wine. These in turn supplied the end product to groups with marketing skill who supplied community shops and other outlets. Pork processing, rice milling, organic fertilizer production, silk weaving and dress making all followed a similar pattern.

Over time, these products found markets beyond the network communities. For example, the wine received regular orders from hotels and restaurants in Bangkok. Hand-woven natural-dye cotton and silk material from one village won a five-star rating from a government promotional scheme and was exported to Japan.

The network also began to expand its activities beyond agriculture, production and trade. Various villages in the network developed different ways of managing their money, for example, establishing credit union groups, savings groups, life insurance, rice banks or cattle banks. By the end of 2005, almost every sub-district under the network had established a savings group to provide members with low-interest loans for production activities. Most of these groups insisted that every member come to the monthly meeting to share information among themselves regarding their lives, families, problems and common concerns. These groups thus help to solidify the community as well as providing financial support. In addition, the interest income from savings groups was used for various welfare funds covering health

care, education, funeral expenses, care of the elderly and care of children.

To best utilize their existing resources, the communities began to systematically collect information on the natural resources, local knowledge, social capital, financial capital, and other assets in the villages participating in the network. This information was used to develop community master plans.

The network also began to campaign for conserving the environment. Households were encouraged to make their own organic fertilizer from waste materials, and to grow timber trees rather than cutting from the forests. Some villages developed systems for recycling waste.

### Organization and linkage

With its growing scale, the network needed a formal organization (see Box 3.3). The network also established connections with similar organizations in other regions including the Yamana Network in the South, Tipchang Network in the North, and the Panapon Network in the Central region. They exchanged knowledge through study visits and training courses.

Government agencies, NGOs and international organizations visited Inpaeng to learn about the network and to share experiences. With help from academic institutions, the network formed Inpaeng Learning and Demonstration Centres, which organize training courses for insiders and outsiders on agriculture, environment, community enterprises, social development, community funds and health care. Training programmes emphasize learning-by-doing at demonstration sites.

These linkages gave the network access to outside sources of knowledge as well as technical and financial support. The Ministry of Agriculture provided funds for the network to promote expansion of Sufficiency Economy agriculture. The Department of Industrial Promotion provided technical training and coaching on enterprise development and management. A local technical college helped wineries to meet technical standards. Network leaders gained experience in negotiating with outside partners for projects of mutual benefit.

**Box 3.2 Learning by doing and sharing**

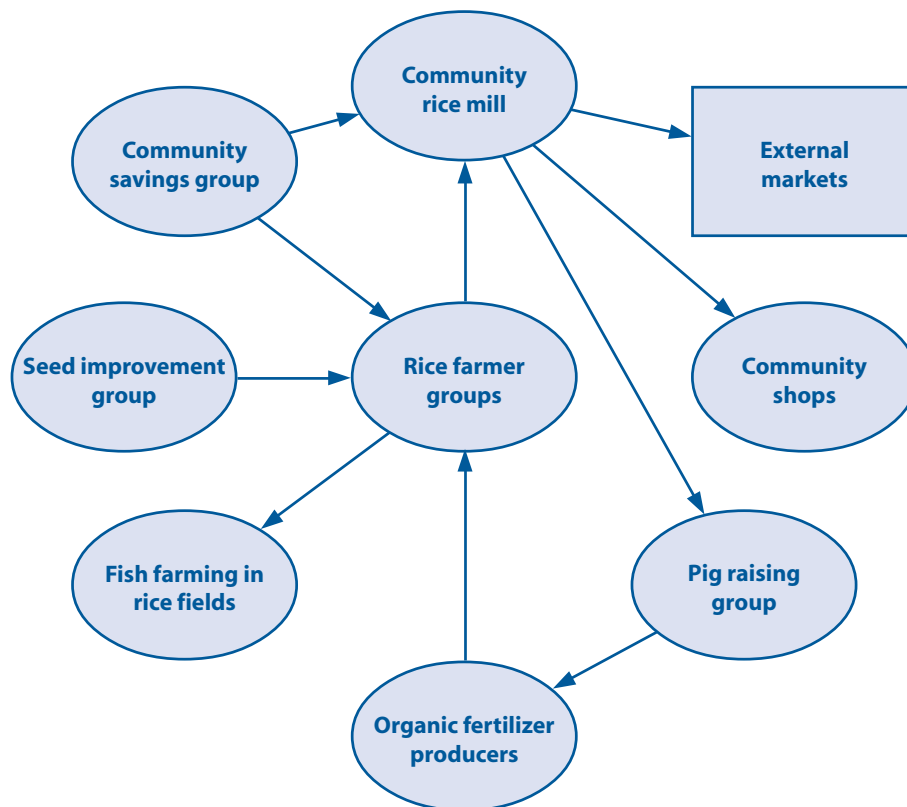
In 1986, Tong Chaipanha visited the Royal Development Study Centre in Phuphan to learn about the King's model farm. His land was on a slope and not all suited for rice. With the help of a loan of 38,000 baht, he divided up his 5 hectares into eight areas for rice, fruit, fish ponds, vegetables, tree nursery, mushroom nursery, chicken runs, cattle grazing, and house site.

He grew rice mainly for home consumption. His orchard yielded lychees, grapes, longans and mangoes for his family's consumption and sale in the local market. In his four fish ponds he cultivated Nile tilapia, common carp, catfish and barb, which supplied his family with protein, and made some income from sale to neighbours. He used natural herbs for pest and weed control.

He found his income steadily grew, while his expenses – especially on chemicals – were being eliminated. The soil on the plot improved, and there were other benefits too: "Many kinds of insects and birds which I had not seen for years now come back to this area because it is free of chemicals which are harmful to them."

Fifteen years after Tong had converted his farm, it became a demonstration site for interested farmers from every region in Thailand, including communities within the Inpaeng network. He provides training free of charge because he believes in the spirit of mutual support and generosity. But most visitors buy some fresh products from his farm anyway.

**Figure 3.2 Inpaeng rice network**

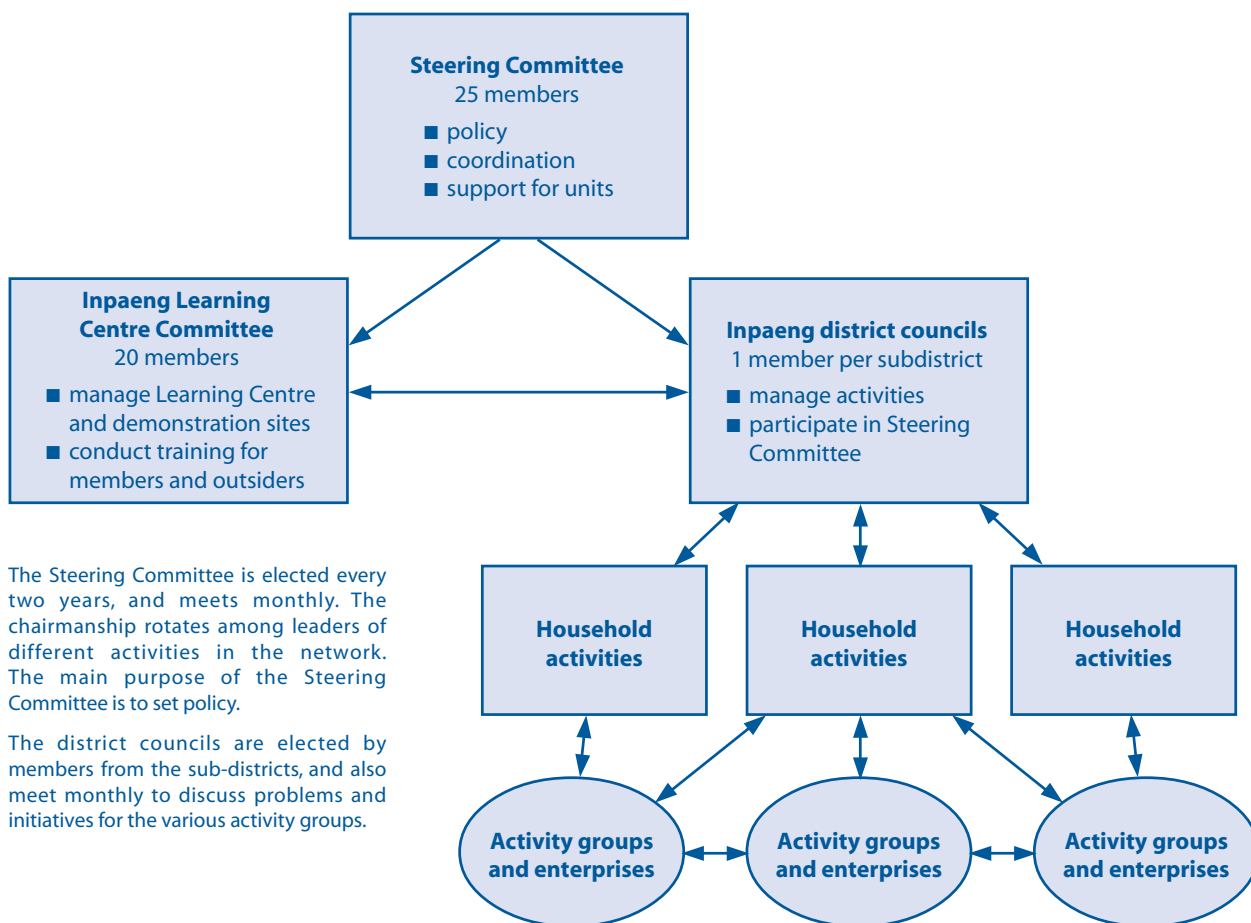


### Box 3.3 Healthy traditional knowledge

In the past, most Inpaeng villages were remote from urban centres, so the villagers developed their own system of health care. While now they have better access to clinics and hospitals, the traditional system still provides economical and effective everyday care. Realizing the value of this resource, members of the network decided to document the knowledge.

In 1991, a young man named Khampoon Kudwongkaew was sent to study herbal medicine with a famous teacher in a nearby province. He studied for two years, passed examinations for government accreditation in pharmacy, and gained working experience in a public hospital. Then he returned and set up a training centre in cooperation with another experienced traditional healer and a Japanese doctor. Their training combined traditional knowledge with modern medicine. By 2005, around 300 people from 57 districts had been trained to produce herbal medicines and apply traditional methods. The centre produced over 20 kinds of medicines that met FDA standards and sold them outside the network as well.

Figure 3.3 Organization of the Inpaeng Network



In the late 1990s, the Network was supported by the government's environmental fund to implement a community-based forest management project that resulted in a large increase in forest cover in the Phuphan range. In 2006, the Inpaeng Network was selected by the government to implement a project called The Greening of Phuphan Forest to commemorate the 60th Anniversary of the King's accession to the throne. The objective of the project was to promote community-based forestry management to rehabilitate the Phuphan forest so it provides sufficient natural resources for the people of the area.

The development of intra-village industries and connections to other networks and organizations corresponds to the third stage of the Sufficiency Economy theory of agriculture, in which communities are encouraged to expand to interact with outside markets and institutions.

### Challenges

Although the Inpaeng Network is now heralded as a success, this was never inevitable and entailed a great deal of hard work and sacrifice.

#### Box 3.4 Building knowledge for sustainable futures

One issue which greatly concerned members of the Inpaeng network was the future of their children. Many young people completed their compulsory primary education and then migrated to the city to earn income, but were limited to poorly paid work as unskilled labourers in factories or construction sites. The issue was brought up in the network committee meetings.

For the short term, they tried to create income-generating opportunities in the locality so young people would not need to migrate to cities. For the longer term, they wanted to equip the children with the right knowledge and outlook.

A pilot project called "Children of Inpaeng" was set up in Ban Bua village. The guiding idea was to enable children to learn and understand about their communities and their cultural roots as well as about the outside world. The children learned to compare information, make sound judgments and work together as a group. They also developed necessary life skills such as critical thinking, decision making, leadership and teamwork.

Learning was predominantly action-based, including visits to the poor in their communities, walks through the forest to understand the ecology, practice in building houses, and instruction on breeding animals and plants. The children organized into small groups to set up plant nurseries, sold the seedlings to adults for raising in their agro-forests, and shared the income to pay for education, clothing and assistance to poor households. They also learned to grow vegetables and brought the produce to sell in the district market. Through these activities they came to understand marketing and book keeping. They visited the elders of the community to learn folk stories, traditional singing and local dances.

Parents eagerly supported the scheme. "We see improvements in our children. They are eager to learn and to ask questions. They have more self-confidence and self-discipline because they learn to do things together as a team."

The pilot was so successful that it was expanded to other villages. Summer camps were set up so children from the various villages could meet and share experiences. Some school groups were so successful with income-generating activities that they were able to buy bicycles, provide funds for poor students, and set up their own savings groups.

In 1995, a group of Japanese students came to visit Inpaeng, and since then similar groups have returned each year. They live with Inpaeng families and participate in the activities of the network. In return, the Inpaeng children learn about Japan and the world outside.

A teacher noted, "Under the new curriculum, classrooms can be anywhere and learning can take various forms. What we see the Inpaeng children doing is impressive. They learn from real-life activities through the learning-by-doing process. This is more fun for children and their learning is more profound."



**During the initial phase (1987–1991)**, most villagers were uncertain. They could see that their market-oriented mono-cropping was going nowhere, but many felt a return to sufficiency agriculture was a step backwards. Most of all, they were uncertain how they would pay off their debts.

Traditional leaders played a vital role in instilling confidence. They invited academics and NGO workers to facilitate dialogues among the villagers about the problems they faced, and the changes they had to make. These discussions helped villagers to realize that they still had plentiful resources to provide food and a healthy living, but they needed a different approach. After a few leaders had demonstrated success in turning their cash-crop fields into integrated farms and agro-forest, more villagers had the confidence to follow.

**In the second phase when the network gathered momentum (1992–1996)**, villagers became critical of government policies to promote market-oriented farming without effective mechanisms to support small farmers. This created some conflict between the network and government agencies at the local level. However, the situation changed in the mid-1990s when government policy switched towards community empowerment and promotion of the King's ideas. The government began to make funding and technical advice available to projects that demonstrated change from within. The communities found a new source of knowledge to help them deal with changes in the outside world.

**The time of growing success (1997–2001)** brought its own problems. Other farmers, government officials, international organizations and foreign visitors wanted to learn from the experience of Inpaeng. The problem facing the network was how to organize the wealth of knowledge they had in order to communicate it effectively with others. Most knowledge was still very much *tacit knowledge* possessed by local experts, living in scattered locations.

The network finally sought help from outside partners such as academic institutions, government agencies and international organizations to turn this tacit knowledge into *explicit forms* that could be shared with a wider range of people. They produced pamphlets, VCDs and cartoon booklets on wine processing, organic fertilizer production, rice milling, natural dyeing of silk and cotton, integrated farming, and on key lessons from the Inpaeng network's experience.

Relations with external partners strengthened. Many government agencies and academic institutions provided support. AusAID became involved. UNDP selected Inpaeng for projects on poverty alleviation through sustainable agriculture and on community-based forestry management.

**The situation in the current phase (2002 onwards)** has continued to become more complex. The issue now facing the network is how to maintain its principle of the middle path amidst the rapid changes of the globalized era.

The solution has been to develop a younger generation of leaders in the network's management. Many have tertiary education and are well-tuned to the outside world, at the same time as being closely tied to the community through their involvement in the Children of Inpaeng programme from a young age. They add a new dimension to the network's vision and capability.

A second problem is directly related to the network's success. Inpaeng leaders are regularly invited to participate in national, regional and local forums. Some have become advisors to the cabinet and the planning board. More and more people want to visit Inpaeng and learn from its success. The flipside of this reputation is that the Inpaeng communities have less time to concentrate on their own development.

The challenge of the present is how to go on acquiring knowledge that enables the network to develop further, at the same time as communicating the network's acquired stock of knowledge to others so that they too benefit from this learning.

### **Conclusion: Living with globalization**

The communities of the Inpaeng Network are far from being isolated from the outside world and the pressures of globalization. Almost every household has a TV, and over half have a mobile phone. More and more children go to secondary schools in town and are exposed to the consumerist fashion of the age. The decision to retreat from mono-cash-cropping almost a generation ago was not a withdrawal from the world. Through their connections to markets, government agencies, universities, other networks and even Japanese schools, they are much more broadly and deeply involved in the outside world than before that first decision.

But they are also much more in control of their lives, and their futures.

### Box 3.5 Same strands, different networks

Inpaeng is not alone. Many other networks have sprung up in rural Thailand over the last quarter-century. Two other examples show that the circumstances may be very different, but the same principles work.

The south of Thailand has little land suitable for growing rice, so many farmers are inevitably involved in market production. The Yamana Network took root among rubber farmers. In 1984, Prayong Ronnarong proposed a "Rubber Master Plan, Farmers' Version" to the government, and won funds to construct eleven community-based rubber processing factories that enabled farmers to gain a bigger share of added value.

The group then looked around for projects that could increase employment, lower expenditure, and raise incomes. They decided to launch a noodle flour factory, and brought six rice-farmer groups into the network. The rice farmers benefited from having a secure market for medium-quality rice which was difficult to sell. The factory was able to produce ten tons of flour a day.

Subsequently the network also linked up with three associations of fruit farmers. The network founded a study centre that concentrated on accumulating and disseminating knowledge about organic farming, freshwater fisheries, chicken raising, mushroom cultivation, pig raising, animal food processing, rice processing and traditional medicine. It raised funding from the government for a community rice-mill that supplied rice to the fruit and rubber growers.

The Panapon Network was founded in the central region in 2000. The network serves as a channel to cooperate on the production of high-quality rice seeds, and the exchange of other knowledge. But the network also promotes a sufficiency-oriented scheme which goes beyond farming.

The scheme promotes economy, environmental conservation and self-reliance through technologies such as integrated pest management, reduced use of imported inputs and forest conservation. But it also promotes the same ends by encouraging members to stay in good health through proper diet based on their own production, to abstain from alcohol and gambling, and to cooperate through pooled labour. The network has tapped help from government agencies, foundations and private corporations, and runs a community radio station as a main means of communication to members and outsiders.

The success of the Inpaeng Network is based on the elements and conditions of the Sufficiency Economy. The first seed of the Inpaeng Network began from the need for greater *self-reliance* to cope with global forces beyond communities' control. The participants used local *knowledge* and *insight* to expand the local economy. They have moved ahead in stages, always building on their inner resources, carefully appraising their options, and always choosing the middle way marked by *moderation*. A straightforward, *ethical* attitude was the necessary foundation for mutually beneficial forms of cooperation. The network built *resilience* against shocks by investing in social capital, accumulating knowledge, and cultivating a future generation of leadership. After all, this prudence is a product of the harsh environment, codified in the folk poems and proverbs of the region, such as "Before heading further, always look back and make sure every step you have taken and will be taking are clear to you." Linkages anchored firmly in the communities gradually expanded within the Network and then outward to

markets and institutions within Thailand and beyond.

In their own definition, the Sufficiency Economy means eight points:

- having a secure living with enough food
- having enough to give to relatives and friends
- having enough to contribute for charities and needy people
- having clean and safe food to eat and be healthy
- living in harmony with nature and other people
- accumulating knowledge and wisdom
- developing community-based enterprises
- having community-based welfare schemes and safety nets

They have come a long way by moving gradually in pace with their own capability.

They have not only expanded their production from household to community and then linkages to the outside world. In parallel they have also expanded their social capital through savings funds, welfare funds, and environmental conservation. Most of all, they have consciously accumulated knowledge at every step of the way. The communities now include experts in integrated farming, agro-forestry, wood carving, fish raising, bee keeping, frog keeping, rattan weaving, silkworm culture, silk and cotton weaving, natural dyeing, fruit gardening, fruit juice processing, herbal medicine and traditional healing.

Their prudence and self-reliance has protected them in turbulent times. The Inpaeng communities were little affected by the economic crisis of 1997 because they depended hardly at all on the remittances which disappeared when migrant workers lost their jobs en masse.

Their slogan is *“Let the knowledge lead and the money follow.”* Perhaps the most far-sighted achievement of the network is the Children of Inpaeng scheme which now produces a new generation of leaders with strong local roots, academic skills, and astute awareness of the outside world.

## Sufficiency Economy and the environment

The rapid depletion of Thailand’s prolific natural resources over the past half century is a prime example of lack of moderation and insight. Evidence of the pace at which the environment of the planet as a whole is moving into a critical stage of depletion reveals the same “insufficiency” on a world-wide scale.

In Thailand, the declining forest cover, clean water sources, marine life and other resources are the focus of growing conflict. The recent fiercer weather conditions created by global environmental decline in combination with local ecological destruction have had fatal results. Thailand has lost lives to mudslides caused by heavy rainfall on denuded hills, and several other countries in Southeast Asia have suffered the same disaster for the same reason.

The environment is clearly an area of concern for the Sufficiency Economy approach. A good foundation of natural resources is fundamental to self-reliance. But what does the Sufficiency Economy approach tell us about caring for the environment?

### Box 3.6 Sufficiency resort

The benefits of the Sufficiency approach to agriculture are not confined to village communities, as the example of Chumphon Cabana shows.

In the crisis of 1997, this resort on the east coast of the peninsula suffered financial difficulties like so many other businesses. In the desperate attempt to stay afloat, the owner took inspiration from the Sufficiency approach. As a start, she began to plant rice, vegetables, flowers and fruit trees on land within the resort project. To improve the sandy land without the cost of chemicals, she experimented with making organic fertilizer from hotel waste and other materials. She planted a local variety of rice and installed a rice mill. The husk was used in making the fertilizer and for animal feed.

As the resort’s land was not enough to supply all its needs, she got the cooperation of surrounding villages to supply the deficit, and also helped train them in making fertilizer and other practices of organic farming. The employees of the resort were especially encouraged to participate. Next she invented a just-in-time system of supply by posting the following day’s requirements of various articles on the local school’s notice board. Local production expanded beyond food to include various cleaning materials made from local materials. As production increased, these articles were also supplied to other resorts in the area.

The resort benefited from low production costs and reliable supplies. Surrounding farmers had a secure market and good prices because there were no middlemen. Soon the resort gained a reputation with the result that other resort owners, farmers, NGOs, and government officials came to learn – which gave the employees a sense of pride.

As the owner concluded, “I think this is a kind of development which makes everybody happy.”

### Box 3.7 Sufficiency in community development

In 2005, the Ministry of Interior resolved to eliminate poverty within three years by promoting the principles of the Sufficiency Economy. In the ministry's scheme, the promotion of the Sufficiency Economy was divided into six elements:

- schemes to reduce expenses through more home production, use of local new materials, energy savings, elimination of costly local entertainments and promotion of local markets
- schemes to increase income by encouraging community enterprises, producer groups and local tourism
- schemes for local saving
- promotion of local leadership and use of community plans
- activities to preserve and protect the environment
- schemes to promote social capital including local welfare schemes, community rice mill, and other cooperative schemes

As a start, a model village was identified in each of the country's provinces. In many of these, households had followed a by now well-known formula:

*We shall plant everything we eat  
we shall eat everything we plant  
we shall use everything we make  
we shall make everything we use*

More striking, however, was the number and variety of new enterprises and communal projects that villages had undertaken to reduce expenses, increase incomes and extend the community's social capital. These ranged from projects to promote local tourism, through revival of traditional practices of weaving and other local manufacture, to cooperative schemes for producing organic fertilizer and innovative forms of local fish culture. The variety of these schemes reflected the variety of local society and ecology. The number reflected the local energies released by the Sufficiency strategy's advice to build on local resources and knowledge. Sanga Khahawong from Krabi province summed up:

"The Sufficiency Economy is about finding knowledge and putting it to use, overcoming problems, correcting mistakes and learning by doing so that the end product is a truly better and happier life. Anything done must be done with commitment, without fear about making mistakes, because you can always try again. Learning by doing is the way to a happy life."

### Royal Projects on the environment

The King has launched several schemes with a primary objective of environmental care and improvement.

He devised and patented a simple paddle aerator for improving the quality of water, particularly in holding ponds behind dams. He also promoted the use of plants which help to clean water naturally.

To combat soil erosion, the King has demonstrated the use of vetiver grass, a sturdy, easy-to-cultivate plant with a dense root system. Planting this type of grass along hill contours, on steep slopes, or in gullies serves to prevent erosion by wind and rain.

In Bangkok, which is located on a flat deltaic plain, the historic canals easily become stagnant as well as polluted by various means. The King suggested opening water-gates during high tides so river water flows into side-canals and dilutes the stagnant water, then flushes out when the tide falls. The King called this "good water chasing bad."

Also in Bangkok, he proposed using a marshy lake (Makkasan) to serve as the city's "kidneys" in the same way as parks serve as "lungs." Water from surrounding areas is drained into this lake where it is then treated using mechanical aerators and naturally purifying plants.

The King developed ways to reduce soil acidity by natural means. First the soil is alternately soaked and dried to bring the acidity to

the surface, then the acidity is removed by applying lime, or washing it away. He named this “tricking the soil.”

To conserve forests, the King advised farmers to grow three kinds of trees – for fruit, for fuel, and for timber. He called this “three forests, four benefits,” with the additional benefit of increasing humidity and soil retention.

The King advised that the best way to recover forests was to let them regenerate naturally. Reforestation by planting often has negative side-effects such as soil erosion, while in the sub-tropical environment, natural regeneration is quite fast. The King also suggested the process could be accelerated by planting a small number of tree types that have prolific wind-blown seeds on hill tops from where they will eventually seed the lower slopes by natural means.

The King has campaigned for the use of check dams on rivers. These weirs, adapted from traditional practice, do not completely impede the river, but create a pond which moisturizes the surrounding farmland, provides some water for irrigation, and offers a site for fish culture.

One of the King’s most visionary schemes of environmental engineering has been a project to relieve flooding in the capital of Bangkok. Traditionally the city floods when the accumulated run-off from monsoon rains falling to the north of the city descend down the rivers and are backed up by high sea tides in the estuaries. The King’s project took advantage of low-lying land to the east and west of the city. The high flow in the rivers is diverted into these areas for temporary storage and then gradually released once the threat has passed. The technique is dubbed “monkey cheeks” by analogy to a monkey inflating and deflating its chubby cheeks.

### Moderately working with nature

As the King noted, he developed his ideas for several of these projects by observing villages on his tours.

*The villagers know all about the three forests – for fruit, fuel and timber. The farmers on the hills know it, and those on the plains know it. They have practised this for many generations, and done it well too. They are the experts. They know what to do and where to do it, which trees to preserve. But sometimes the knowledge has been forgotten.*

The King has experimented with these ideas to make them replicable, and sometimes added some technology to make them more effective.

These and various other projects share some key characteristics. They are simple. They depend heavily on methods and materials that are available in nature. They are designed to be low-impact and non-intrusive. They acknowledge the complex inter-connections within nature. They avoid creating new problems in other parts of the eco-system. They are self-sustaining. Most of all, they are economical and easy to implement.

Similar approaches have been adapted by village communities practising the principles of the Sufficiency Economy. The Inpaeng communities consciously avoid cutting down more forest, invest in reforestation, and use natural methods for soil fertilization, pest control and waste water treatment. In Trang, some villagers who began practising Sufficiency principles in their own coastal location have since linked up with villagers on the hills behind to make comprehensive plans for the environment of a whole river basin.

Recently, the Thailand Research Fund has commissioned research to gather the learnings from several local environmental projects based on Sufficiency principles as a part of a scheme to develop indicators for evaluating the progress of development in all provinces.

The Sufficiency Economy thus offers certain guidelines for approaching environmental problems within the framework of moderation, insight and resilience.

- seek solutions offered by nature
- seek solutions in traditional practice
- consider the impact on other parts of the eco-system
- favour solutions which are self-sustaining
- favour solutions which are economical

### Sufficiency Economy and business

The Sufficiency Economy approach is proven in the realm of agriculture and community development. But what about in business? As an economy develops, agriculture’s role diminishes. In Thailand today, agriculture is the principal occupation of 40-45 percent of households, and contributes only around 11 percent of GDP. If the Sufficiency approach is to be more than a minority interest, it must find its place in the growing urban economy.

### Box 3.8 Tsunami and Sufficiency

In December 2004, the village of Santa-u on Lanta island off Thailand's southwest coast was devastated by the tsunami. Houses were swept away. Fishing boats were smashed. And tourists stopped coming.

The community's response was guided by the Sufficiency idea. Draw on internal resources, especially local knowledge. Build self-reliance. Revive local economies by seeking solutions available in the natural environment. The result went far beyond restoration of livelihoods to a revival of the surrounding environment and culture.

The community set up its own dockyard to repair boats, worked cooperatively to repair houses, and pooled savings to fund income-generating activities. One thing led to another. Before long they found they had revived old handicrafts such as batik to make money, recalled traditional entertainments to entice back the tourists, and re-landscaped the village for greater pride.

Surrounding villages soon joined in, and the scope of cooperative projects expanded. One village planned a community museum to house old photographs and antique artefacts. Another helped their neighbours to return to traditional farming, so there was no need for chemicals. People shared with each other the best recipe for shrimp paste and the best technique of replanting sea grass. A community co-operative was set up to market agricultural and marine products to hotel and resort owners.

To solve a shortage of water, the Lanta communities built check-dams, drilled artesian wells and constructed gravity-fed schemes. To prevent soil erosion, they planted vetiver grass on the mountain slope. To help protect themselves from future tsunamis, they reforested the coastal area with mangrove and pine trees.

The Lanta communities discovered that the Sufficiency Economy has meaning that goes beyond the economy. Community revival under the Sufficiency approach extended to local culture, the natural environment, and the islanders' personal contentment and spiritual gratification.

As a set of universal principles, the Sufficiency Economy ought to be useable in business as in other areas of life. But what exactly are the approach's implications for business management? And what are the benefits and limitations?

Several firms have already long-adopted practices which are consistent with the Sufficiency Economy approach. The sections following look at the experience of one large firm, and three small- and medium-sized enterprises (SMEs). These stories show that the Sufficiency Economy approach can be an aid to business. They also show that the approach's major contributions come in the area of cultivating a long-term perspective, focusing attention on people, appreciating all stakeholders, and prioritizing the management of risk.

What, then, can be done to make the approach more widespread in the business world? The final section summarizes work-in-progress on translating the Sufficiency Economy approach into business tools.

### Siam Cement: Valuing the individual in a giant corporation

Siam Cement is one of Thailand's oldest and largest companies. In the 1997 crisis, the company suffered heavily from the consequences of rapid and ill-timed expansion. But its fast recovery was aided by its strong corporate culture that conformed to Sufficiency Economy principles.

Siam Cement's business philosophy and emphasis on its people were developed long before the Sufficiency Economy approach was formalized. However, the Crown Property is a major shareholder, and the company's board has included several members who work on the Royal Projects. The basic principles of the Sufficiency Economy thinking found their way into the corporate culture through people who worked alongside the King in various endeavours.

In 1983, the company made public its philosophy of doing business using four principles:

- Adherence to fairness
- Belief in the value of the individual
- Concern for social responsibility
- Dedication to excellence

To address the first point, the company in 1987 formally adopted a code of ethics that it shared with its employees, vendors, contractors and other stakeholders. The code was substantially refined and took its current form in 1998:

- Fairness to all who have business relationships with the Siam Cement Group
- Making business gains in a proper manner
- No political alliances
- No discriminatory treatment

To promote social responsibility, the company sponsors a large range of projects including ones targeting environmental preservation, promotion of traditional Thai arts, and human welfare.

Siam Cement's dedication to excellence is shown through its high standards of education, technology and quality control, which ensure its products command premium status in their markets.

But, of the four elements of its philosophy, the best known and most distinctive is its *"belief in the value of the individual."*

Siam Cement pays great attention to its people. It recruits young talent at the beginning of their careers, with a strong preference for engineers or the graduates of top US business schools. It shuns the practice of hiring staff in mid-career, and always promotes from within. This obliges the company to invest heavily in training, while it also gives the employees a high level of loyalty and pride in their firm.

Training is a regular part of a career at Siam Cement – from entry-level business training to a higher-tier management development programmes, with faculty imported from the Wharton School, University of Pennsylvania. Besides business and technical skills, the company cultivates a particular corporate style. The ideal Siam Cement employee is *khon di khon kaeng*, a good and smart person, meaning technically competent, ethical and sensible. He or she is supposed to be "low profile, high productivity."

## Valuing people in a crisis

Siam Cement's high reputation made it an attractive partner for incoming foreign capital. From the 1970s onwards, the group diversified into many new areas, often in joint ventures. In addition, in the mid 1990s, the group embarked on an aggressive expansion of its cement capacity to meet the demands of the construction boom. To finance these ventures, the group contracted debts of US\$ 6.6 billion, mostly in foreign currency. These policies made Siam Cement highly vulnerable when the Thai baht was floated and then depreciated from July 1997 onwards. Huge debt servicing costs, coupled with a plunge in demand for its products, delivered a loss of US\$ 1.2 billion in 1998, and US\$ 4.8 billion in 1999.

The company's strategy had clearly overstepped the bounds of prudence, and failed to provide any immunity against shock. In the aftermath, management took drastic steps to correct this. Cement, paper and petrochemicals were designated as the group's core businesses. Interests in other sectors were either sold off or scaled back. A new emphasis was placed on exports and on risk management. In 2000, the group delivered a small profit, and by the following year was firmly on the road to recovery.

This drastic restructuring was generally guided by Sufficiency principles, particularly an imperative to build greater resilience into the corporation's structure. Here we will concentrate on one specific aspect: human resource policies.

A key element of Siam Cement's strategy in the clutch of the crisis was to remain true to its basic business philosophy, particularly its belief in the value of the individual, and its adherence to fairness. Although the group divested peripheral businesses, in the core sectors it maintained a policy of no lay-offs, even in the face of such startling losses. And the budget for human resource development was not slashed, but increased by half a billion baht.

The rationale for these policies was that the company's business was bound to change as a result of such a deep crisis, and thus the company's main asset – its people – needed to be prepared to ensure the restructuring and reorientation was a success. Some Siam Cement top managers admit this decision was a gamble, but they believe it paid off.

The fundamental insight behind this decision was that the company would need a more multi-skilled workforce in order to cope with rapid change. The extra investment in training was designed to make the company more flexible by multiplying the skills and thus the potential job roles of its employees. The company continued this human resource restructuring policy for five years, and then adjusted its strategy again to meet the opportunities of the post-crisis era.

Siam Cement's corporate culture can be interpreted as an implementation of the principles of the Sufficiency Economy, and thus is an example of some ways in which these principles can be used in business. The key elements are:

- codifying business philosophy, and making it known to employees, business partners and other stakeholders
- placing strong emphasis on fairness and social responsibility
- making belief in the value of the individual the guiding principle of the human resource policy
- adhering to the company's core principles, even in the face of a huge crisis
- building immunity through the quality of the workforce

### Sufficiency Economy and small- and medium-sized enterprises

Much more characteristic of Thailand and other developing countries are companies that are more modest in size and newer in foundation. Such small and medium enterprises (SMEs) have to fight to survive. The failure rate is very high, for many reasons. Very often the management depends greatly on a single individual or a family. They work with low technology, and do not have the resources to innovate. They have difficulty predicting market changes, and are vulnerable to swings in the national and international economy that are beyond their control. These pressures have increased markedly in recent decades with the accelerating pace of globalization and fiercer competition from new players in international markets.

Some survive and prosper over the long term. But how?

This section looks at some Thai SMEs. All had modest beginnings, but acquired scale by growing gradually over the long term, and avoiding disasters. In each case, the business leader adopted a strategy that was consistent with the Sufficiency Economy – always conducting business ethically, learning continuously, growing moderately and building protection against shocks.

### Hand crafting an international market

Sa is paper handmade from the fibre of mulberry trees. There are many producers of similar handmade papers in Thailand and elsewhere in the Asian region. Competition is intense. Raw materials are in declining supply. Success in this business is a function of keeping material costs low, developing the skills of the workforce, and evolving creative new products.

Over 40 years ago Fongkam Lapinta migrated from her hill village to a settlement outside Chiang Mai that had a tradition of making sa paper, though the business was in decline because of falling demand. At first, she was not well-liked in the new location because of her origins and poverty.

She started making sa paper on a small scale with attention focused on low cost. She acquired raw materials from surrounding communities. She relied on labour from her family. She sold the products in the local market in Chiang Mai.

When the business began to expand, neighbours came to work with her, first from the immediate village, and later from farther afield. Some worked in her workshop. Others were trained in the workshop and then produced from home.

As the business took off, banks came to offer her loans. Fongkam refused. Through to the present, she has never operated on credit, although she uses bank services for transactions. She always used income first to pay her employees and suppliers. If there was any surplus, it was stored in a fund to guard against risk. Only when funds accumulated beyond a cushion did she invest in expansion. The pace of growth was determined by the availability of raw materials, and the capacity of her own accumulated capital.



**Table 3.1 Siam Cement: Business and human resource strategies**

	Pre-crisis (Before 1997)	Crisis era (1997–2002)	Post-crisis era (2003–)
Business strategy	<ul style="list-style-type: none"> <li>■ Growth</li> <li>■ Import-substitution</li> <li>■ Quality and fairness</li> </ul>	<ul style="list-style-type: none"> <li>■ Back to core business</li> <li>■ Increase export and value-added</li> <li>■ Corporate good governance</li> </ul>	<ul style="list-style-type: none"> <li>■ Go regional</li> <li>■ Design and development</li> <li>■ Innovation and differentiation</li> </ul>
Human resource strategy	<ul style="list-style-type: none"> <li>■ Develop professional staff</li> <li>■ Internal labour market</li> <li>■ Promotion from within</li> </ul>	<ul style="list-style-type: none"> <li>■ Develop self-discipline</li> <li>■ Improve productivity, without lay-offs</li> <li>■ Maintain HRD cost</li> </ul>	<ul style="list-style-type: none"> <li>■ More business-oriented</li> <li>■ Competency-based HRD</li> <li>■ Talent management</li> <li>■ Constructionism/project-based learning</li> </ul>
Human resource management	<ul style="list-style-type: none"> <li>■ Systematic, professional personnel administration</li> </ul>	<ul style="list-style-type: none"> <li>■ Human capital management</li> <li>■ Job redesign</li> <li>■ Building multi-skill employees</li> </ul>	<ul style="list-style-type: none"> <li>■ Innovative organization</li> <li>■ Shared services and outsourcing</li> <li>■ Knowledge management</li> <li>■ Recruitment centre</li> </ul>
Human resource development	<ul style="list-style-type: none"> <li>■ Massive investment in training</li> <li>■ Conventional T&amp;D</li> <li>■ Promotion from within (systematic career path)</li> </ul>	<ul style="list-style-type: none"> <li>■ From classroom-based to activity-based learning, project-based learning</li> <li>■ Developing multi-skill employees</li> </ul>	<ul style="list-style-type: none"> <li>■ Self-directed learning</li> <li>■ Transformational training</li> <li>■ Change programmes</li> <li>■ Special track</li> <li>■ Corporate university</li> </ul>

Sometimes orders had to be turned away because the natural manufacturing process required supplies of time and sunlight that were not flexible. "Someone came to say, I want to place an order with you for two hundred thousand baht to be delivered within a month. I didn't accept it, because it would be too rushed. We make what we can."

She invested to make sure her employees were content, as they were crucial to the enterprise's ability to diversify while retaining quality. Employees were offered interest-free loans, and encouraged to participate in daily savings schemes.

Gradually the products found markets outside of Thailand. Fongkam began to export. This was difficult at first because of language barriers, but Fongkam was helped by her own clients.

One even gave her company its English name, Preservation House.

As her products acquired an international market, she began to diversify the range in order to spread risk, making items as varied as hospital gowns and elephant sculptures. After the government began to provide promotion for craft industries in the mid 1990s, the number of her products expanded from a hundred to a thousand.

Sa production depends heavily on nature. After some chemical dyes resulted in sickness among the workforce, Fongkam innovated to replace chemicals with natural products. Even when demand increased, the company stuck to manufacture by hand and refused to install machinery. Productivity was increased by innovations developed within the company.

### Box 3.9 Profit and principle

In 1985, Wisut Withayathanakorn inherited his family vegetable oil business, which had around 10–15 percent of the Thai market. He had started working in the family business after graduating from vocational school. Even after taking on management responsibility, he continued to find time to continue his education. Eventually he acquired two bachelor degrees, an MBA and a Master's in political science. He noted:

"The world is changing all the time, so I need to update my knowledge all the time. Everything is related and integrated. Nowadays, people think and act in disconnected ways. When solving one problem, they create others. We need to know more in order to manage better."

From the beginning, he determined to take an ethical approach to business.

"I think our lives are a mix between the *dhamma* path and the capitalist path. In business management, I use the capitalist way. But in managing the people in my business, I prefer to take a *dhamma* way. If we just take the capitalist way all the time, it creates all sorts of problems because it's based on infinite greed... Accumulation is useless. We can't take it with us when we die."

These principles dictated his approach to managing the business. He distinguished between maximum profit and appropriate profit.

"Conventional businesses aim at maximizing profit, but this is risky and likely to create problems. If we know what is enough, what is an appropriate profit, then the risks are much reduced."

Maximum profit required a higher degree of exploitation – of employees, of customers and of other stakeholders. Beyond a certain return, Wisut believed the surplus should be reinvested in improving the product for the customer, upgrading the skills of the workforce, providing social contributions for the community and environment, or giving better margins for his suppliers and other stakeholders. Wisut founded a club for entrepreneurs and executives with goals of education and social contribution.

His approach to business decisions was cautious. He avoided the temptation to take foreign loans to finance rapid expansion. As a result, he survived the 1997 crisis with little difficulty.

Over two decades, production capacity expanded six times, sales multiplied ten times, and the market share grew to 50 percent. Today his company is the acknowledged leader of the vegetable oil industry. Wisut is a vice-president of the Chamber of Commerce, and has been honoured for his social contributions.

"In life, sufficiency is insurance against taking risks. If we know what is enough, then we won't think in a careless way. If we are not urged on by greed, we are more clear-headed. This is so important for sustaining life."

The company devised a simple but effective system of managing waste water to ensure there was no pollution of rivers. The resulting water was good enough for raising fish, and caused no smell or other pollution. Later Fongkam got technical help from a local institute to generate heat by recycling gas produced as a by-product.

Throughout, Fongkam conducted her business by a strict ethical code. She believed that any underhand practice would ultimately be bad for the business.

From very small beginnings, Fongkam's traditional paper business expanded slowly but securely over forty years. It now employs

around 400 people from neighbouring communities, and exports 80 percent of its production. The business has survived and prospered despite small beginnings, high competition and many barriers.

Fongkam has always thought long-term. She has regulated the pace of expansion by the availability of capital, labour and natural resources. Growth has come from inside, from development of people and techniques. Fongkam has paid attention to her stakeholders including suppliers, employees, customers and the local community. She has shown great respect for nature, which is the foundation of the business. She has in particular valued her own staff whose skill and

creativity are the core of the business. She has built resilience into the business by careful expansion. The 1997 crisis created no problem since the business had no debt.

### Gilding a reputation

Jewelry is one of Thailand's principal exports. The world market is not only highly competitive, but very volatile because of changes in consumer tastes. Companies can achieve quick success and also rapid failure. Risk is high because of large capital costs. Corporate turnover is also high.

Pranda Jewelry was founded in 1973, and has grown steadily for over thirty years. Much of the success can be attributed to all-round good management including smart marketing, innovation, attention to customer satisfaction and financial prudence. But Pranda's success also has some other, more interesting aspects.

The company began at a relatively modest size. The founder, Preeda Tiasuwan, always aimed for "balanced growth" rather than breakneck expansion. The company focused on expanding one overseas market at a time, beginning with the UK and eventually servicing forty countries. Preeda believed in fair risk and normal profit. He also paid attention to all his stakeholders including employers and customers, but especially business partners:

*Is it right to squeeze our partners, making them cut costs down to the bone? It's not. You make the shareholders happy with the profits made by sucking the blood out of your partners, but it only works short-term. In the end, your partners will collapse and die, and you have to find replacements who don't know what your company wants. You have to begin again. But if you can preserve the old partners by allowing them a suitable profit, then they'll feel good about your company and you'll get benefit from them.*

He worked hard at building long-term relationships with suppliers and trade partners by mutual benefit-sharing. He was meticulous about paying taxes and working within the law. Preeda developed the company by using key performance indicators and feedback from stakeholders.

Preeda began to work with Social Venture Networks, an international non-profit organization. The network's watchword is "healthy communities, human spirit, and high returns." It promotes an approach to business which values all stakeholders, pays attention to the environment, adopts ethical practices both

inside and outside the enterprise, and shares knowledge and experience across the world.

Pranda Jewelry was caught with foreign exchange exposure in the 1997 crisis and had to enter debt restructuring. Now the company takes care to hedge its foreign exchange risks.

Preeda gained a worldwide reputation as a straightforward businessman. The company has grown steadily over thirty years with not a single year of decline, even during the economic crisis. Pranda now employs 3,500 people in twelve company groups both within Thailand and overseas.

### Learnings

In their different ways, these enterprises have achieved considerable success. What are the common elements?

#### Moderation

- They had a long-term perspective and were not tempted by more risky routes to short-term gain.
- They believed in extracting a normal or appropriate level of profit so that any surplus could be used in other constructive ways.
- They grew by stages, based on appreciation of their internal capacities.

#### Insight

- They were very attentive to their stakeholders including employees, suppliers and customers.
- They placed high value on their own people.

#### Resilience

- They were attentive to managing risks.

#### Knowledge

- They grew by developing their internal capabilities, especially the skills of their employees.

#### Integrity

- They conducted their business ethically with due regard for their impact on society and environment.
- They invested in projects of corporate social responsibility.

What can be done to translate these and other learning arising from the Sufficiency Economy approach into tools which help other businesses to enjoy similar success?

### Visioning business with the Sufficiency Economy

Business is the pursuit of profit. Without a positive bottom line, a business will not survive. But as business has become more complex with scale, global competition and accelerating technological change, so also the notion of business profit has become more complex.

To begin with, the idea of business profit has a component of time. Most firms are not interested only in their immediate returns, but also in sustained growth and continuing profits in the future. In addition, the number of factors which affect profits have multiplied. Sales, costs and the price of money are only a few. Some of the biggest companies in the world have disappeared almost overnight because of ethical failures. Some have been crippled because they are perceived as socially irresponsible or environmentally dangerous. Meanwhile others prosper in part because of the good will of their customers and other stakeholders.

Corporations understand that long-term success depends on much more than financial performance. Successful European corporations, particularly those from the Rhineland area, pay increasing attention to their interaction with society. A business theorist (Avery), who analysed the success of long-established European companies like Novartis, BMW, Allianz and Porsche, concluded that sustainable enterprises must pursue five goals:

- operate under a long-term perspective
- really value their people
- genuinely focus on a range of stakeholders (including future generations)
- embrace ethical, social and environmentally-friendly practices
- nurture innovation

Modern business theories attempt to capture these various factors affecting business success in models that can be used by firms to plan effective business strategies, and to evaluate their own performance. How can the Sufficiency Economy approach be built into such models? Let us start by reviewing the state of the art of modern business strategy planning.

### Business strategy and planning

One approach to strategic management which has become very popular since its introduction in the early 1990s is Kaplan and Norton's *Balanced Scorecard*. This technique broadened the criteria for assessing a company's performance beyond mere financial performance by adding three other elements: a qualitative assessment of internal business processes; an assessment of the company's ability to learn and grow; and an evaluation of its relationship with its customers. In essence, this technique was a device for encouraging companies to take some of their focus off the short-term profit-and-loss statement, and to assess how well it was building foundations for future profit through internal processes and its key relationship with its customers.

Another set of theories arose out of the growing importance for corporations to conform to law and regulation. At their simplest, these theories were designed to protect the interests of minority shareholders. At their more complex, they aimed to import the whole notion of good governance into the corporate world – honesty, the rule of law, transparency and accountability. Many firms have committed to codes of *corporate governance*.

Thus far, these business theories still concentrated closely on the internal workings of a business and its transactions with two major outside parties, customers and government. However, from the 1980s, theorists introduced the concept that businesses had a very wide range of stakeholders who had a claim on the firm, and that all of these stakeholders had full rights to be taken into consideration. These stakeholders included customers and government, but also employees, business partners, the community where the business was located, and the society as a whole. Some theorists also added the business' own competitors to this list.

Finally, theorists have broadened the concept of stakeholders to embrace the whole of the outside world, and the society of the future. The concept of corporate social responsibility emphasises that companies have a responsibility for their impact on the environment, on society, on human rights and on the well-being of future generations.

### Box 3.10 Sufficiency vending

On the front of Pen's sticky rice stall is a sign: "I've made losses but I've never given up. Every drop of sweat is for the kids' future."

Pen came to Bangkok from upcountry at age 20 with just a lower secondary education. She found work as a contract seamstress. The hours were long. She didn't have time for her children. Their upbringing fell on her aging mother. She drifted into debt.

After seven years, she decided that to regain control over her life, she needed to be more self-reliant. She switched to vending.

She could use her own knowledge. She had the cooking skills anyway. She knew how to do accounts carefully to make a profit. Other expenses were minimal. "I chose this lane because we live here, there's lots of people, and I don't have to pay any rent." She believed in fair practice, and resisted the temptation to raise prices on festival days for fear it would damage her reputation and spoil her relations with customers.

"This gives enough to live on and some savings towards buying a house. I don't want to buy a mobile phone. It's a waste. I want my kids to graduate from college. If I have enough money, I'll let them study higher. I want them to work in an office, not slave like me." One daughter is already at a prestigious pre-university school.

Her debt is almost cleared. "Just let me get rid of the debt, by having just enough, not being impatient."

### Sufficiency and long-term business strategy

Taken as a whole, these business theories convey the message that a successful business in the contemporary world needs

- to build internal processes with the capacity for expansion
- to conform strictly to law and regulation
- to maintain good relations with all stakeholders
- to be responsible for its impact on the outside world and future generations

These various areas can be pictured as concentric circles (see Figure 3.4). At the centre is day-to-day management of profit-and-loss. Each larger circle adds a further level of complexity – better business processes, corporate governance, attention to stakeholders, corporate social responsibility – in recognition of the complexity of the real world. The transition from centre to rim is a passage from short-term profit orientation to a comprehensive and balanced strategy for long-term growth.

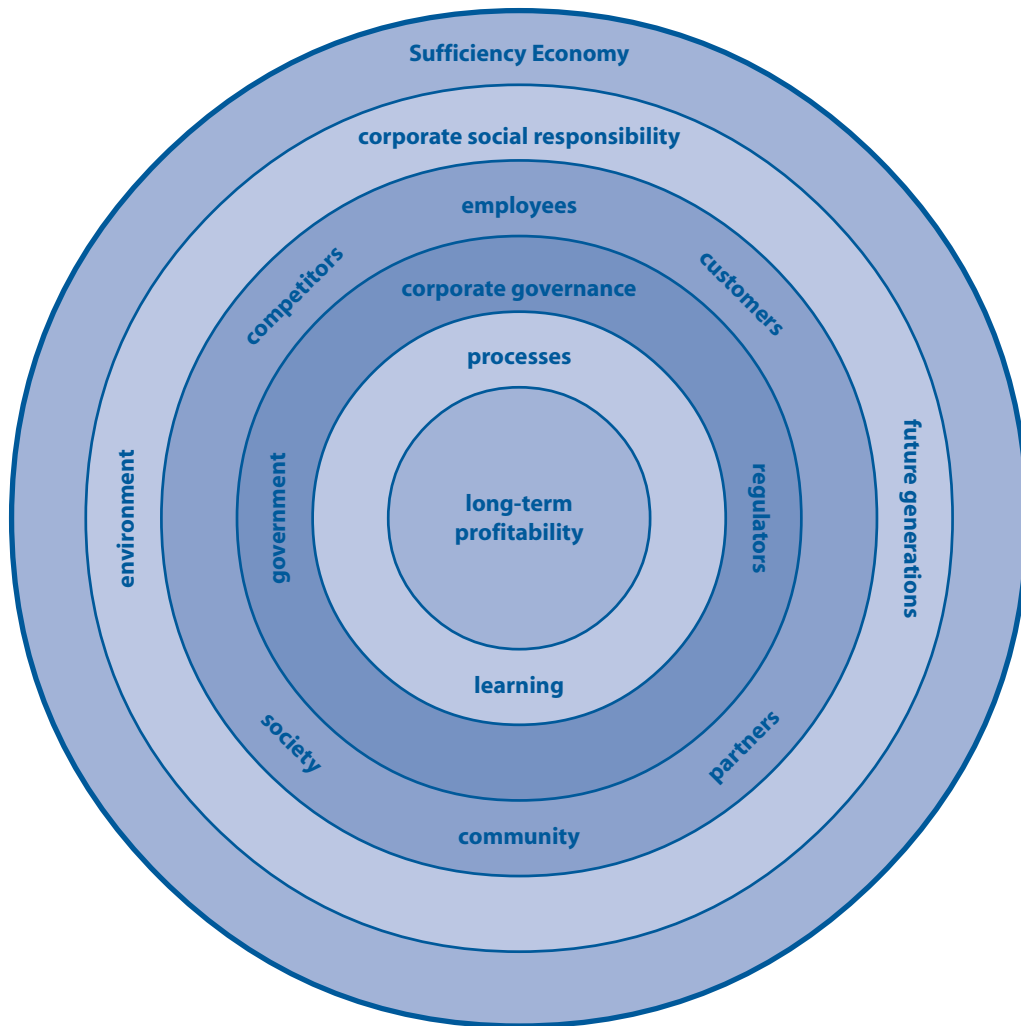
It is not difficult to show that the Sufficiency approach is compatible with this model at all its levels. A company needs to accumulate learning and act with integrity. It will benefit from exercising moderation, insight and prudence in its relations with its stakeholders, and in its management of its impact on the outside world.

The Sufficiency approach may not add much in terms of the goals of business strategizing. Its value lies in two other areas.

First it provides a guide for taking decisions that will be in line with these goals. The components and conditions of the Sufficiency approach can be used as a yardstick to evaluate strategic options and everyday management decisions.

Second, it strengthens the corporate commitment to remain true to its vision and advertises that commitment in the public domain. Some companies have been suspected of professing commitment to corporate governance and social responsibility as tools of marketing and public relations, perhaps in order to mask activities that run counter to

Figure 3.4 Balanced strategy for long-term growth



these codes. In principle, a commitment to the Sufficiency approach is a commitment to ethics which precludes such deception. Sharing this commitment with employees and other stakeholders can help to solidify this commitment even further.

In medium to large corporations, the principal responsibility for making use of these principles will lie with the board of directors. They have the duty of overseeing the quality of day-to-day operations including business practices and financial results, and also of evaluating the corporation's strategy including business objectives, risk management and corporate policies. The Sufficiency components and conditions – moderation, insight, resilience, knowledge, integrity – can be used to evaluate both strategy and operations. For example the board may set scopes or limits for key financial performance indicators, or insist on the preparation of fuller plans for risk management.

Any enterprise which wishes to survive for any length of time needs to broaden its horizon beyond its own bottom line. It needs to consider a strategic approach to the changing environment, its relations with multiple stakeholders and its place in society. Here the Sufficiency Economy approach can help. As the brief summary of the business models above indicates, integrating the thinking of the Sufficiency Economy into an enterprise's long-term vision and strategy can help to build the inner strength that delivers resilience in a competitive world.

### Sufficiency and the national economy

What use can be made of the Sufficiency Economy approach in the management of the national economy?

After the King's speeches in 1997 and 1998, Thai economists concluded that the Sufficiency approach was compatible with mainstream economics because it accepted trade and globalization, and because it embraced an idea of optimization. Every Thai government since that time has formally espoused the Sufficiency Economy as its guiding principle. What have been the results in the areas of macro-management, policy design and overall development strategy?

### Building greater immunity into macroeconomic management

Thailand had a long history of conservative macroeconomic management founded on a fixed exchange rate and fiscal discipline enforced by a legal cap on government borrowing. However, in the late twentieth century, the adequacy of this approach was weakened by the massive expansion of the private sector, liberalization of the financial sector in the context of greatly expanded international capital flows, and, finally, the end of the fixed exchange rate in 1997. In the aftermath of the financial crisis, the Sufficiency approach's emphasis on the need for self-immunity helped to guide a wide-ranging overhaul of Thailand's approach to macroeconomic management.

Since then, the system has incorporated several new components. First, the floating exchange rate has been retained so that the value of the currency will closely reflect market forces. The central bank undertakes to limit its role to short-term interventions designed to smooth over unusual or irrational short-term movements in the currency's value. The central bank has to resist political pressures to intervene in order to manipulate the currency's value in favour of certain groups.

Second, as debts had proved the undoing of countries in the 1997 crisis, and reserves had served some as a bulwark, the government undertook to reduce overseas debt and to build up the foreign reserves to a historic high.

Third, in 2000 the central bank imposed some discipline on its own management of interest rates by adopting the technique of inflation targeting – setting medium-term goals for the underlying rate of inflation, and then managing key interest rates to achieve that goal.

Fourth, fiscal conservatism has been reinforced by retaining the old practice of keeping government debt below 50 percent of GDP, and adding some extra goals: a government debt

service ratio below 15 percent; at least 25 percent of the government budget devoted to capital projects; and a balanced budget by the year 2005–6.

Fifth, research work has begun on the creation of a national risk management scheme based on indicators of both the domestic and global economy.

With these new measures in place, Thailand recovered much of its reputation for conservative macroeconomic management. However, advocates of the Sufficiency approach point to two areas where Thailand's macroeconomy continues to lack moderation and self-immunity.

First, domestic savings have fallen, with the consequence of increasing the country's reliance on foreign funds. The fall began in the bubble atmosphere of the mid 1990s, accelerated during the asset destruction of the crisis, and was extended by policies to stimulate economic recovery by increasing credit. The overall gross savings rate fell from 36 percent in 1994 to 30 percent a decade later (see Figure 3.5).

The fall in savings was especially steep among households (8.5 to 4.8 percent over 1993–2004). The flipside of this decline has been rising levels of household debt. More households are in debt, and the average amount is much higher in relation to income. More households have inadequate resources to cover their own investment needs. This reduces the immunity of households to shock. This trend deserves special attention in view of the aging society. As the workforce shrinks as a proportion of the total population, there is a tendency for savings to fall further, and a risk that society will not be able to provide well for its elderly.

A second area of weakness lies in energy security – a fact that was driven home by the steep inflation of oil prices in 2006. Thailand is highly reliant on oil as a source of energy, and is very inefficient in its usage. Artificially low pricing for energy encourages wasteful consumption. The Sufficiency approach suggests a need to develop greater self-reliance through alternative energy sources and appropriate pricing. Government has dallied with policies to promote solar energy, and more recently bio-energy, but these policies have lacked drive and consistency. The low efficiency of energy use is partly a function of the industrial structure, but also a result of a highly energy-wasteful transport system.

**Box 3.11 A model for Sufficiency Economy business tools**

How to convert this thinking into a practical business tool? Here we offer a simple four-stage model.

**Stage 1:** Identify the relevant stakeholders. At a start-up stage of the business, this might include only internal stakeholders such as employees, executives and shareholders. At a later stage of business growth, this list might be extended to include external stakeholders such as customers, partners, communities and society.

Against each set of stakeholders, define strategic objectives which accord with Sufficiency principles. The result might look something like this:

	Internal stakeholders			External stakeholders	
	Shareholders	Executives	Employees	Customers	Partners
Knowledge Integrity	<ul style="list-style-type: none"> <li>Full compliance with law and taxation</li> <li>Ethical investment criteria</li> </ul>	<ul style="list-style-type: none"> <li>Good corporate governance</li> </ul>	<ul style="list-style-type: none"> <li>Publish company business philosophy</li> <li>Recognize employees' rights and freedoms</li> </ul>	<ul style="list-style-type: none"> <li>Articulate commitment and responsibility to consumers</li> </ul>	<ul style="list-style-type: none"> <li>Mechanism to share information</li> </ul>
Moderation Reasonableness Resilience	<ul style="list-style-type: none"> <li>Economic profit rather than business profit</li> <li>Reasonable shareholder benefit</li> <li>Good risk management in investment</li> </ul>	<ul style="list-style-type: none"> <li>Maximize use of internal resources</li> <li>Growth within means</li> </ul>	<ul style="list-style-type: none"> <li>Balance between employee benefit and shareholder benefit</li> <li>Skill upgrading</li> <li>Full social provision</li> </ul>	<ul style="list-style-type: none"> <li>Focus on product value not price and margin</li> <li>Spread risk by managing product range</li> <li>Innovation through constant R&amp;D</li> </ul>	<ul style="list-style-type: none"> <li>Develop long-term relationship with mutual benefit</li> </ul>

**Stage 2:** Devise means to measure progress against each of these objectives. This can be done through a simple form setting out the objective, the item to be measured, and the initiatives or projects to realize the target.

Objective	Measure	Target	Baseline data	Initiatives
Economic profit rather than business profit	<ul style="list-style-type: none"> <li>Production volume to optimize economic profit</li> </ul>	(value)	(value)	(projects)
Reasonable shareholder benefit	<ul style="list-style-type: none"> <li>Dividend ratio to other companies in sector</li> </ul>	(value)	(value)	(projects)
Good risk management in investment	<ul style="list-style-type: none"> <li>Debt ratio</li> </ul>	(value)	(value)	(projects)

**Stage 3:** Weigh the importance of each of the stakeholders, internal and external, at this stage of business development. The weights allocated are a function of the management's own judgement.



**Stage 4:** Calculate a Sufficiency Alignment Index, by assigning scores based on the measurement criteria, and applying the weights for each set of stakeholders (see table following for an example).

Stakeholder	Objective	Score	Weight	Index
Shareholders	<ul style="list-style-type: none"> <li>■ Full compliance with law and taxation</li> <li>■ Ethical investment criteria</li> <li>■ etc</li> </ul>	100	100	100
Executives	<ul style="list-style-type: none"> <li>■ Good corporate governance</li> <li>■ Maximize use of internal resources</li> <li>■ etc</li> </ul>	70	100	70
Employees	<ul style="list-style-type: none"> <li>■ Publish company business philosophy</li> <li>■ Recognize employees' rights and freedoms</li> <li>■ etc</li> </ul>	50	100	50
Customers	<ul style="list-style-type: none"> <li>■ Articulate commitment and responsibility to consumers</li> <li>■ Focus on product value not price and margin</li> <li>■ etc</li> </ul>	40	50	20
Partners	<ul style="list-style-type: none"> <li>■ Mechanism to share information</li> <li>■ Develop long-term relationship with mutual benefit</li> <li>■ etc</li> </ul>	80	40	32
Communities	<ul style="list-style-type: none"> <li>■ Awareness of business impact on community</li> <li>■ Support local community</li> <li>■ etc</li> </ul>	20	50	10
Society	<ul style="list-style-type: none"> <li>■ Foster good business practice</li> <li>■ Act as good citizen</li> <li>■ etc</li> </ul>	10	50	5
Competitors		0	0	0
<b>Totals</b>			<b>490</b>	<b>287</b>
<b>Index (287/490)</b>				<b>58.6</b>

This tool is simply an aid for a company to define objectives for itself which are in line with the Sufficiency Economy principles, and to measure its own progress towards them. The model needs to be adjusted to each company's nature and needs. The important point is that the company's operation should be studied within the whole framework of moderation, reasonableness, resilience, knowledge and integrity. The relative importance of each of these will be different for each company, and will change over time.

### Designing sustainable policies

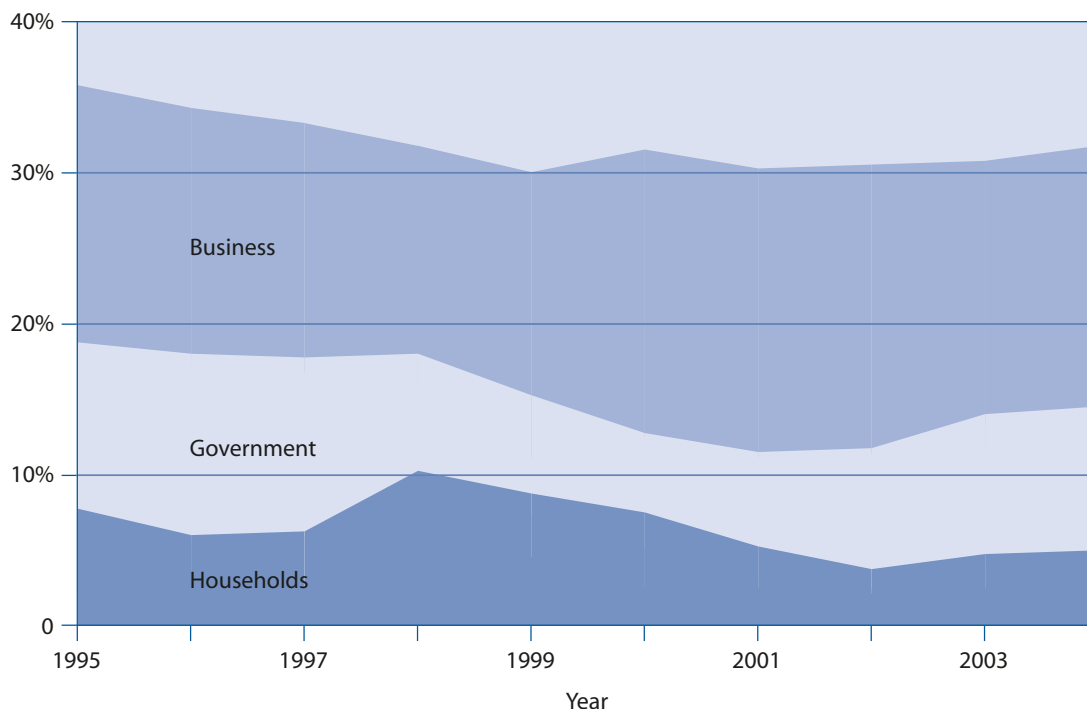
The Sufficiency approach potentially provides criteria to help in shaping and evaluating government policies. Does the policy follow a middle path, thus avoiding extremes? Is it well-thought through, consistent, achievable and sustainable? Does it increase immunity and lessen exposure to risk? Will it make individuals, groups or the whole country stronger and more self-reliant?

Since 2001, government has a put in place several landmark initiatives in the area of social provisions:

- universal health care,
- rural debt relief and
- village-level development funds.

These policies deliver real social benefits and are rightly popular. But advocates of the Sufficiency approach have raised concerns whether the design of these policies could not be improved. In particular, the costs may not be sustainable. Two examples that follow will make that point.

**Figure 3.5 Gross savings as a percentage of GDP, 1995–2004**



Note: Calculated from the Annual Flow Funds accounts, prepared by NESDB

The **'million baht per village'** fund is intended to raise local productivity by making credit much more easily available at the local level. Hundreds of thousands of households have benefited from the scheme. However, there have been fears that some portion of the loans has been used to defray other debts or make consumer purchases, rather than meeting the original objectives. Critics have accused the scheme of contributing to the rising level of household debt. Unfortunately there has been no rigorous, independent evaluation of the scheme.

In the current design of the scheme, placing controls on the usage of the funds would probably be impractical and ineffective. Sufficiency thinking suggests an alternative strategy would be to transform the scheme into village banks in which loans are balanced by deposits. This approach would offset any increase in debt by simultaneously encouraging savings. It would also be an incentive to borrowers to make more productive use of the funds in order to build their own creditworthiness. This approach would increase local self-reliance, and lower household exposure to risk.

**Thailand's universal health care** scheme introduced four years ago has lifted more people above the poverty line than any other

single government scheme. It has made a major contribution to human development.

But the evolution of the scheme contradicts many aspects of the Sufficiency Economy approach. The planning of the scheme was rushed. It did not build on developments from within the health care industry. No comprehensive review was undertaken to measure the implications of launching such a scheme in parallel with promoting health services as an export item.

As a result, the scheme lacks firm foundations. Funding is inadequate. Administrative systems have needed to be constantly revised. Many hospitals and doctors have abandoned the scheme. In short, the planning and implementation lacked moderation and insight. The result is unsustainable in its present form. Thailand is rapidly evolving a multi-tier system of health care, and the experience of other countries shows that the lowest tier of such a system will deteriorate over time.

These examples raise questions about the true extent of governments' commitment to the Sufficiency Economy. In principle, there should be no contradiction between designing policies which are popular, and designing policies that are sustainable and conform to the Sufficiency approach.

### Box 3.12 The changing economics of development

The approach to economic development theory has changed over recent years, and new approaches have made the discipline more receptive to the Sufficiency Economy thinking.

Early theories of development focused intently on achieving growth of GDP through two main means. First by overcoming a presumed shortage of capital by raising the rate of savings or by importing foreign capital. Second by transferring labour from agriculture into activities with higher productivity, especially industry. The agency for achieving these goals was the state – by providing infrastructure, setting up incentives, removing market-mechanism barriers and providing overall coordination.

Over the last decade, a new generation of development economists has supplanted this model. Their thinking is based on appraisal of what happens in the real world, often employing rigorous quantitative techniques, rather than the sweeping generalizations of earlier theories.

The learnings are more subtle. Capital is still important, but how and where capital is used has become more important than its sheer quantity. Productivity is important but can be achieved in many ways, particularly through the quality of human capital. Government is important but government has its own interests that are not necessarily best for society. Its decisions can be motivated more by politics than theory, and often the decisions are wrong. There are many things that can confound development – such as high transaction costs, weak property rights, incorrect or incomplete information, misperforming markets and corruption. The market can no longer be conceived as a self-regulating process because it is distorted by unequal access to information, by political interventions and by other factors. Government has to create institutions that help markets to work as efficiently in practice as they should in theory.

In addition, economists have begun to redefine the scope of development. Sustainability has become so well accepted it is now virtually a given. Environmental concerns can no longer be ignored. Studies of well-being and happiness have begun to redefine the goals of development in a potentially radical way.

There has also been a change of attitude towards optimization. Mainstream economics assumed a choice could be optimized by comparing the effects (utilities) of different options. In truth, that situation rarely holds because information is never perfect, and because any decision takes effect in a future that is changed by many other decisions taken in parallel by other actors. As a result, economists have attempted to theorize about decision-making under situations of uncertainty. An important contribution by Herbert Simon argued that because of “bounded rationality” (roughly, imperfect ability to understand the true situation), it made more sense to take decisions that delivered a known satisfactory outcome, rather than a theoretically best possible one. This thinking closely parallels the idea of a middle way based on appraisal of the best information available.

### Making Sufficiency the guiding principle of development strategy

The vision for Thailand’s Tenth Five-year Plan (2007–2011) is built around the Sufficiency Economy approach. This has resulted in a more comprehensive strategy than in other recent plans with similar objectives.

Thailand’s plans are indicative documents, and implementation is always spotty at best. The Eighth Plan (1997–2001) aimed to change the priorities in economic policy from growth to social development, but after the 1997 economic crisis, the Plan’s vision was overtaken by short-term focus on survival. The Ninth Plan (2002–2006) restated the vision and formally

adopted the Sufficiency Economy approach, but implementation was still hindered by the lingering aftermath of the crisis. Most of the quantitative targets were met, but qualitative goals in the areas of society, community and culture were forsaken.

In part this happened because the economic and social components of these two Plans were not well integrated. Particularly in the Eighth Plan, an ambitious social programme sat rather uneasily alongside a conventional macroeconomic plan. In the Tenth Plan, the Sufficiency Economy thinking is used to provide a more integrated and coherent framework.

### Box 3.13 Sufficiency in government service

When I was in a senior position in the public health ministry I had the opportunity to make hidden benefits from signing off on purchasing and contracting. But I never did it. It depends on the individual. If you don't get involved, they leave you alone. I have to give credit to my wife too. When I was in government service, people came to see her, but she wouldn't receive them. Because of this, some people think that my family and I are already well off. In truth, we're not. And some people who are well off only want more and more.

My father used the word "corruption" for anything received improperly. My family taught that there's nothing wrong with being poor. If we have less than other people, it's not demeaning.

In the past, people would give blessings to children like "May you grow up to have a lot of people under you and be rich as a millionaire." If the children then failed to achieve that, they felt a failure in life. My father understood this, and wanted to change it. He always said, "May you be a good person for society. Don't create difficulty for the society and yourself. May you be healthy and content as appropriate."

Dr. Witoon Saengsingkaew, former health administrator (adapted from *Praew Magazine*, 25 December 2005, p. 252.)

The process of developing the Tenth Plan, as in the two previous instances, involved a lengthy consultation with a wide array of institutions and social groups. More than on previous occasions, however, this process was focused on interpreting what the Sufficiency Economy approach meant for national development strategy.

The planners concluded that the principle of *reasonableness* dictated a need for great care in appraising the true situation of the country, both internally and externally, so that development strategy would draw on the country's assets and potential, fulfil social needs and be consistent with external circumstances. Previous plans delivered high growth with many benefits, but also resulted in massive environmental destruction, gaping inequities, major social problems and increased exposure to external shocks.

The planners interpreted the principle of *moderation* as pointing to a need to strike a balance between self-reliance and competitiveness, between assigning resources to strengthen the social foundations, especially in rural communities, while at the same time investing to ensure Thailand's businesses improved their competitive advantage in the world.

The need for *self-immunity* was interpreted to mean building internal strengths at every level from the individual through the community to the nation in order to cope with external changes, pressures and shocks.

And finally, the underlying conditions of knowledge and integrity dictated a need to

make people the centre of development; to invest in building people's capabilities; to create a fairer institutional environment, in which everybody can contribute to national development; and to ensure popular participation not only in the drafting of the plan but also in its implementation.

The draft plan summed up the strategy as,

*...drawing on knowledge, integrity and perseverance, and following the principles of moderation, reasonableness and self-immunity, in order to respond well to change and globalization and to move towards an ideal of a 'society of sustainable happiness.'*

The strategy to achieve all of these aims is to concentrate attention on the country's internal resources – its people, natural environment, social capital, culture, institutions and business assets – rather than looking primarily for assistance from outside. The Tenth Plan aims to make the usage of all of these various internal resources more efficient and more sufficient. The result of this strategy will be greater self-reliance, more sustainable growth based on the country's true competitive advantage, and more equitable sharing of social benefits.

This strategy is broken down into five main programmes. The first of these programmes aims to develop the quality of people through reforms of education and training, more investment in research and expertise, and better health care.

The second lays out plans for strengthening local communities to provide a stronger social foundation and greater equity.

The third and most wide-ranging segment of the plan envisages a major overhaul of the economic structure to improve the usage of all kinds of resources. This includes changing the tax and investment structure for business, mobilizing under-utilized government assets including land, extending social security, improving savings through a national pension fund, giving more independence to the central bank, upgrading infrastructure and logistics to improve competitiveness, improving efficiency of energy use, undermining monopolies and other distortions that hinder open competition, and introducing more transparent public-sector accounting.

The fourth segment lays out plans to revive the environment and protect bio-diversity through various measures including tax disincentives. The fifth and final segment aims to extend good governance through legal reforms, further decentralization, increased popular participation and the promotion of democratic culture.

This plan lays out the biggest shift in Thailand's economic orientation in over two decades. It hopes to achieve this by relying less on government and more on public participation. The Plan identifies four main sets of stakeholders – government agencies, business networks, local communities and families. The planning agency intends to work with all of these to inculcate Sufficiency thinking, and create demand for implementation of the Plan's programmes.

In line with Sufficiency thinking, the Plan concentrates on processes as well as objectives, and lays out an array of performance targets which go beyond the conventional economic dimensions to include measurements of income inequality, education provision, health care and many other social indicators.

As this Report is written, the Sufficiency Economy approach has served as the guiding principle for a coherent strategy with insight and vision. Whether this plan is more successful than its two predecessors now depends on how this thinking is translated into concrete strategies, and how those are implemented.

### Sufficiency and governance in public services

The fifth segment of the plan addresses the issue of good governance in public services. This section acknowledges that the effectiveness of government strategies is critically affected by the quality of public servants. This agrees with the emphasis that the new development economics places on corruption and related forms of government failure. It also agrees with the Sufficiency approach, which has ethical practice as a *precondition* for any successful endeavour. Corrupt governments are rarely successful at delivering balanced and sustainable development.

King Bhumibol has repeatedly spoken on the importance ethics as a precondition.

#### Box 3.14 Education for development

From the start of his reign, the King actively promoted education as one aspect of development that benefits not only the individual, but also the community and the nation as a whole. Projects ranged from funds for the temple schools that served the poor, through to scholarships for the brightest students to study at tertiary level in Thailand and overseas. In 1969, he initiated a project to develop Thai-language junior encyclopedias for different branches of knowledge. Now, 24 volumes are distributed to schools and public libraries.

The King also understood the importance of non-formal learning and exchange of information. He promoted construction of small multi-purpose halls where villagers, monks and government officials could meet informally to discuss local affairs.

“Education is a major factor to create and develop a person's knowledge, ideas, behaviour and merit. Any society and country should provide good, complete and well-balanced education, covering all aspects for the youth so that the society and country will have qualified citizens. They will be able to sustain the country's prosperity and to develop the country progressively.” (27 July 1981)

### Box 3.15 Sufficiency curriculum

The lower-primary level trains children to adopt a Sufficiency Economy approach in their daily lives in the home.

- G1: self-reliance in daily life; sharing with family and friends; saving
- G2: economical spending; analysing family expenses; reducing expenses
- G3: being helpful and generous; sharing money and goods

The upper-primary level moves on to applying the principles at school.

- G4: surveying household accounts; cooperative projects
- G5: applying Sufficiency principles at the school
- G6: analysing the application of Sufficiency at school

The lower-secondary level progresses to applying Sufficiency principles in the community.

- G7: Analysing the community's history, status, social capital, and current problems; applying Sufficiency methods to solve those problems
- G8: Applying cooperative principles in daily life; participating in a cooperative store; identifying a community cooperative project
- G9: Applying Sufficiency principles in community development

Finally at the upper-secondary level, the focus switches to the national level.

- G10: Study of the concepts in the Royal Projects and King's speeches
- G11: Understanding Sufficiency in economic and social development
- G12: Application of Sufficiency principles in various sectors

*A country has both good and bad people. Nobody can make everybody good. Ensuring a country is in a normal state of peace and stability is not a matter of making everyone good, but of supporting the good people to govern the country, and preventing the bad people from having the power to create turmoil.*

*(Siracha, 11 December 1969)*

*You must always act in a way that is seen to be correct, because if people work without sincerity, matters deteriorate, and ethical standards decline away until they disappear completely. If you dare to act correctly, it will serve as an example which encourages all intelligent people to be determined to act in the same way.*

*(Chulalongkorn University, 15 July 1971)*

*If you are dishonest, may you go to hell in the future. This is a crude way of putting it, but necessary. If you are honest and committed to development, may you live to be a hundred years old and be strong in your old age. Honesty will enable Thailand to escape dangers, and prosper within ten years. The key point is to uphold honesty and never be dishonest at all.*

*(Speaking to provincial governors on 8 October 2003, as reported by Dr. Sumet Tantivejkul, Thai Rath, 21 March 2004)*

But recently it was revealed that 10 billion baht had gone missing from budget funds. Senators have complained that bribe-taking is rampant among their colleagues. Suwarnabhumi Airport, the biggest infrastructure project in recent years, has been plagued with accusations of corruption.

The fifth component of the Tenth Plan aims to improve the working culture of the bureaucracy, upgrade ethical standards, ensure compliance with legislation to give citizens freedom of access to information, improve procedures for bidding on government contracts, and enforce more transparency in budget allocation.

### Sufficiency Economy and education

The Sufficiency approach is a guide for living – a guide to taking the small decisions of an individual's everyday life, and the national decisions over the economy. For the Sufficiency approach to become part of the culture of everyday life, it must settle into the mindset of people as something as natural as doing arithmetic or riding a bicycle. For this to happen, education is crucial.

Recently, there has been a systematic attempt to integrate the Sufficiency Economy thinking into the school curriculum at every level. The aim is to teach children from an early age how to be self-reliant and live a balanced life so that they can contribute to society and cope with changes in the globalized world. This teaching is distributed across the curriculum in four three-year sections (see Box 3.15).

A large part of the teaching is practical and participatory. Children at the lower-primary level learn how to keep their own income-expenditure balance sheets as a tool to make better use of their money and time. Later they take part in savings schemes, projects to learn the value of frugality through recycling items used at school, and growing garden vegetables for use in school meals.

At secondary level children work on community development projects, take part in activities at the local temple or mosque, and develop projects to promote local wisdom, conserve local historical sites, and sustain the inheritance of Thai culture. A special emphasis is placed on local projects for environmental conservation.

In 2004, children from all schools and all levels were invited to participate in an essay competition on the topic, "Examples of sufficiency economy applications that I know." This project revealed that most children understood Sufficiency only within the limited concept of the model self-reliant farm. As a result, another competition was devised for teachers or pupils to develop teaching tools to improve the understanding of the Sufficiency discipline in its broader aspects.

To teach Sufficiency principles in the most effective way, the school itself needs to be an environment where those principles are at work. From October 2006, teachers, school directors and local education officials from all over the country will be involved in training on integrating Sufficiency principles not only into the curriculum but also into the management of the school.

Experiments on integrating the Sufficiency Economy into the way that schools are run has already begun in welfare schools that provide children of poor families with a free education, including accommodation, food and clothing. Under the auspices of Princess Sirindhorn, these schools have launched a programme to make the schools more self-reliant. The students engage in planting vegetables, raising poultry

and other activities to provide the school with necessities. This project not only reduces the costs of running the schools and earns money for the students' families but also acts as practical education in the values of the Sufficiency Economy.

Another scheme has been launched to provide children with training in the use of computers and the Internet without incurring the costs this would normally imply. The project solicits donations of computers from the public, and teaches children usage of the Internet offline through the use of specially prepared content discs. This avoids not just the cost but often the practical impossibility of setting up an Internet connection in the remote areas where some of these schools are located.

One major problem of the Thai educational system is providing good-quality teaching in rural schools that have fewer students and hence fewer teachers. In 1995, a project was begun to overcome this problem at reasonable cost by exploiting the modern technology of satellite broadcasting. The live programming is filmed in a school on the premises of the Klaikangwon Palace in Hua Hin. Thirteen satellite channels are used for simultaneous broadcast of twelve grades of primary and secondary schooling, and one channel of vocational, community and university education.

By 2004, 8,140 schools, around one quarter of the total, had been connected to the system. In addition, the programming is made freely available on the Internet. Participating schools are supplied with course manuals, and hook-ups via phone and fax. The courses go beyond the normal school curriculum to include more moral education and extra subjects of vocational training in agriculture and industry. The King has provided scholarships for the best graduates of the programme to continue to tertiary level. The technology has been transferred into neighbouring countries through training courses and gifts of equipment. The principle of distance learning has also been extended through international hook-ups for teacher training.

These initiatives in integrating Sufficiency into education are either experimental or at an early stage. Their future success will depend crucially on the extent to which teachers and school administrators truly embrace Sufficiency principles.

### Box 3.16 Model schools

Certain schools across the country have been selected as pilot projects for more intensive application of Sufficiency principles.

Chamathewi School, Lamphun, has an integrated learning project on Sufficiency living.

Kanchanapiset School, Phetchabun, has an experiment in school banking.

Ban Kutchiang Mi School, Yasothon, is practising bio-agriculture to supply school meals.

Ban Laokokhongsawang School, Khon Kaen, has a cooperative project.

Makut Raachakuman School, Rayong, has an environmental management project in a local river basin.

Chulabhorn Ratchawittayalai, Phetchaburi, is developing a botanical garden to raise community income.

Ratwinit School, Bangkok, has a project on conserving Thai culture and way of life.

Thai Rath Wittaya, Ranong, is studying the environment for sustainable agriculture.

Kalayani Si Thammarat School, Nakhon Si Thammarat, is developing an integrated curriculum based on Sufficiency principles.

Wat Kho Suwanram School, Bangkok, has a model integrated farm with rice, herbs and poultry.

Borom Rath Rangsan School, Bang Bon, has a model farm, vetiver grass planting and fisheries project.

Khlong Phittayalongkhon School, Bangkokhuthian, is breeding shellfish.

## Conclusion: Sufficiency Economy at work

Ideas similar to the Sufficiency approach have had growing appeal to Thailand's small farmers over recent decades, as they realize their vulnerability within the context of globalization. The shock of the 1997 crisis spread similar awareness much more broadly within Thailand.

The long story of the Inpaeng network illustrates the core truths of the Sufficiency approach. You need a firm foundation before you build up. You must proceed with caution and care, learning at every stage. The Inpaeng case also illustrates that the Sufficiency approach is dynamic. One stage leads to another with no need for a limit or ceiling. On this basis, the communities in this traditionally poverty-stricken area have been able to overcome their problems and find a more comfortable place in the world.

The same basic principles are as applicable to the firm as they are to the farm. Several

companies, ranging from small family firms to large conglomerates, have already made this discovery. Work is now under way to translate these insights into tools that are appropriate for the culture and practice of business.

The Sufficiency Economy now serves as a mission statement for the nation. At the individual level, Sufficiency thinking is being integrated into the school system. At the macro level, it is being used to guide the strategy for economic and social development planning. When translated into the world of macroeconomics, the key elements of moderation, insight and resilience translate into clearer thinking about competitiveness, sustainability and risk management.

For the Sufficiency approach to have its full effect, it must find a place in the mindset of the people. Sufficiency is now taught across the curriculum of primary and secondary schooling, and Sufficiency principles are being applied to the management of schools.





4

## Sufficiency Going Forward

# Sufficiency Going Forward

The Sufficiency Economy is a movement that has appeared in Thailand over recent years. It has been articulated and promoted by the country's monarch, King Bhumibol Adulyadej, but has taken root because it aligns with a long history of community-based thinking on alternative development. The objective of the movement is to *change the direction of thinking and practice on development*.

The Sufficiency Economy is not a theory about how the economy of a country works. Rather, it is a guide to making decisions that will produce outcomes that are beneficial to development.

From the perspective of the Sufficiency Economy, development is a process of building self-reliance as a secure foundation for the future. Sustainable development is a gradual process, which proceeds by stages and is driven largely, but not exclusively, by an internal dynamic.

To achieve this form of development requires the application of three main principles in assessing opportunities and taking decisions:

- choose a middle path, seeking moderation and avoiding extremes;
- apply insight, understanding well the background of any action and its consequences; and
- be aware of risks and the need to build in resilience.

Pursuing this path requires a commitment to knowledge and learning; a high level of integrity and sincerity; and a capacity for tolerance and perseverance.

Sufficiency thinking is rooted in Buddhist thinking about the nature of humanity, but these ideas are not exclusive to Buddhism, and find echoes in humanist ideas found in most religions about the perfectibility of man, the importance of compassion and the benefits of self-discipline.

## Sufficiency Economy and Human Development

The UNDP's agenda of Human Development and the thinking behind the Sufficiency Economy share a lot of common ground. Both place people firmly at the centre of development. Both emphasize that development is a process of equipping people with the opportunities to improve themselves and realize their own potential in order to live full, creative lives with freedom and dignity. Both approaches assume that development has to be sustainable, equitable and respectful of the natural environment.

But Sufficiency Economy deepens and complements human development thinking in two key ways.

First, the Sufficiency Economy offers a *process*, coded into three simple principles, which can be used for analyzing situations, identifying objectives, setting plans and taking decisions that will achieve sustainability, health, longevity, learning, empowerment and well-being. These principles are applicable at any level. They can be applied to the management of a small farm, the running of a business, or the drafting of a national plan.

Second, the Sufficiency approach places greater emphasis on mental and spiritual development. Indeed, it contends that mental or spiritual development is integral to all kinds of development. Practitioners must be committed to learning, have a high level of integrity and be able to persevere. Adopting the Sufficiency approach is a form of discipline that brings its own reward. At the level of the individual, it develops mental and spiritual capacity. At the level of organizations, it cultivates a culture of ethical and compassionate behaviour.

## Six messages for taking Sufficiency forward

The Sufficiency approach originated in the context of rural development, but is not limited to that realm. The principles can be applied in many different contexts to avoid unbalanced growth, to advance human development, and to guard against the threats and dangers of globalization. From the analysis of the application of the Sufficiency Economy in this Report, six key messages emerge. These universal messages are presented here along with some key action points for Thailand today.

### 1. The Sufficiency Economy is central to alleviating poverty and reducing the economic vulnerability of the poor.

The Sufficiency approach directs attention away from large-scale, capital-intensive projects that often bring more benefits for politicians and contractors than for the supposed beneficiaries. Large dams and similar projects are no substitute for projects that work closer to the ground and involve the community and the household.

The key to development is the pursuit of greater self-reliance. This is a powerfully simple idea, but one that is sometimes easy to misunderstand. It does not mean seeking independence from the market or other outside linkages, but having greater *relative* reliance on one's own resources. In some cases, this may mean higher dependence on own production at the household or community level. But this is not universally the case. More often, it means greater dependence on the knowledge, capital, resources and other assets of the household or community rather than dependence on the outside.

With the idea of self-reliance comes the idea of growth by stages, powered, as far as possible, by the internal dynamic of accumulating knowledge, capital and other capabilities. Don't run before you can walk. Don't overstretch resources. Learn continuously. In short, apply the principles of moderation, insight and resilience at every stage.

Poverty alleviation and rural development are inseparable from the environment and natural resources, which are of critical importance in building self-reliance. Care for the environment should follow Sufficiency principles. Conservation projects should be low-cost, non-intrusive, and careful to respect the complex inter-connections within eco-systems. As far as possible they should rely on natural processes, but borrow technology where appropriate. In several Thai communities that follow the Sufficiency thinking, this approach to the environment is an integral part of local planning.

Any development should build greater immunity against the risk of future shocks. The poor have often become poor or remain poor because they are vulnerable to crises of all kinds, from family disasters to global instability. The liberalization of markets and advances in communication technology mean that disturbances arising in the international economy are larger and more sudden than before. The Sufficiency approach is not a withdrawal from globalization, as this is impractical and would forsake benefits along with risks. Rather, Sufficiency aims for a more prudent balance between local and global agendas so that the impacts of outside shocks are manageable.

#### Action points:

- Make the Sufficiency approach central to government anti-poverty policy through schemes to build local capacity for self-reliant production, disciplined expenditure and prudent risk management.
- Provide the landless and land-poor with land from the extensive reserves of land that is unused because of ownership by government agencies, encumbered by legal process, or other reasons.
- Implement the community control over local resources that was promised in the 1997 Constitution by passing the community forestry bill and other enabling legislation.
- Ensure development spending is not skewed to certain provinces with political clout, but is equitably distributed, targeted at areas of real need, and used more creatively.

#### Box 4.1 The rewards of perseverance

At the same time he was articulating the Sufficiency Economy, King Bhumibol published an adaptation of *Mahajanaka*, one of the Jataka tales about the previous lives of the Buddha.

In a quest to better himself quickly, a young prince undertakes a highly risky business venture. He is shipwrecked and his companions all perish. However, he sets out to swim towards an impossible landfall. After several days without sight of land, a goddess challenges him to give up, but he replies:

“Any individual who practises perseverance, even in the face of death, will not be in any debt to relatives or gods or father or mother... Any enterprise that is not achieved through perseverance is fruitless; obstacles will occur... Anyone who knows for sure that his activities will not meet with success, can be deemed to be doomed; if that one desists from perseverance in that way, he will surely receive the consequence of his indolence... Some people in this world strive to get results for their endeavours even if they don't succeed... As for us, we are going to endeavour further to the utmost of our ability; we are going to strive like a man to reach the shores of the ocean.”

The goddess decided to rescue him.

## 2. The Sufficiency Economy is central to community empowerment and the strengthening of communities as foundations of the national economy.

Greater self-reliance at the community level is the foundation for sustainable growth in the local economy. This is true in rural community networks such as the Inpaeng case where self-reliant local circuits of exchange provided the springboard for secure and sustainable engagement with the outside world. It is equally true of urban communities, though the details are different. Development efforts in poor urban communities should focus on promoting economic activities that have long-term sustainability, and on building local capacity for self-help.

Leadership and organization are critical for the success of Sufficiency-oriented communities. Religious organizations, of any denomination, can play important roles in developing values conducive to a Sufficiency approach. Community organizations should be able to access the resources made available by administrative decentralization.

One major role of community organization is to compile, store and share local knowledge and the learning experiences from Sufficiency practice. Communities cannot rely on the formal educational system. As in Inpaeng, communities need to devise their own institutions for passing on knowledge to future generations within the community and to outsiders.

Within the context of the community, some forms of redistribution and welfare are needed to aid those who are incapacitated in some way through disability, old age, household breakdown, natural disaster, lack of access to resources, or whatever. But interventions from outside create a breach with the principle of self-reliance and may be poorly planned and ill-targeted. At worst, they become mere hand-outs. Where needed, funds should be channelled through existing community institutions so that they strengthen rather than weaken these bodies.

Corporate projects of community development should also be focused on the Sufficiency strategy of building local capacity and self-reliance.

### Action points:

- Target community development efforts, urban and rural, towards building capacity for self-help and sustainable economic activities
- Strengthen community capability to manage finances, and investigate feasibility of converting village funds into local banks in order to promote savings and nurture a more sufficient credit culture
- Ensure local government bodies provide opportunity for community participation
- Facilitate efforts to share learning and best practice of successful community groups and networks
- Replace hand-out policies with schemes that strengthen communities' own capacity to provide for all of their members' needs
- Encourage corporations to support community projects in line with Sufficiency principles as part of corporate social responsibility

### 3. The Sufficiency Economy takes corporate responsibility to a new level by raising the strength of commitment to practices conducive to long-term profitability in a competitive environment.

Today the pursuit of business profit is a lot more complex than the management of costs and returns. Businesses have to be attentive to a range of stakeholders ranging from their employers and customers to the society at large. They have to be acutely conscious of risk in a highly competitive and fast-changing environment. They must answer to oversight by official agencies and by civil society. In recent years, ethical mistakes have wiped out major companies, and damage to the environment has crippled others. Corporations need new disciplines to ensure their profit and growth is sustainable.

These disciplines have been provided by new codes for risk management, stakeholder appreciation, corporate governance and corporate social responsibility. The Sufficiency approach is compatible with and supportive of these systems, but it also adds two extra dimensions.

First, it offers a *process* for planning and implementing business strategies with the goals of sustainable profit and social responsibility. The three Sufficiency principles provide an integrated framework for devising strategies that build internal protection against risks, observe proper governance, and are careful of the impact on community, society and environment.

Second, the Sufficiency approach represents a level of commitment that goes beyond the observance of rules and codes. Major Thai firms have found that building their corporate philosophy around Sufficiency principles, and sharing that philosophy with their employees and other stakeholders creates a culture that is conducive to long-term corporate success.

### Action points:

- Incorporate Sufficiency principles into training for corporate directors and into the code of corporate governance enforced by the Stock Exchange of Thailand
- Persuade the major business associations to propagate Sufficiency principles among their members
- Provide more widespread publicity for businesses of all sizes that have utilized Sufficiency principles in ways that benefit both the business and the society at large
- Create an advisory service to help corporations align their social projects with Sufficiency principles

### 4. Sufficiency principles are vital for improving standards of governance in public administration.

Achieving Human Development depends greatly on the quality of public administration. Corruption is an enemy of Human Development. It weakens the impact of government policies, and distorts the direction of government strategy. The poor and vulnerable are often the worst victims of higher costs and poorer services.

This is an area where the Sufficiency conditions of ethics and knowledge are of critical importance. The King has constantly spoken on the importance of high standards of personal conduct in public administration. Over recent years, there have been attempts to strengthen institutions to overcome corruption, but there is widespread doubt that this has been successful.

Recent governments have publicly espoused Sufficiency principles, but have failed to explore ways to mobilize those principles for improving standards of behaviour in public service. Several things could be done. The institutions for monitoring and punishing corrupt practices need to be strengthened, and the system for selecting their members overhauled. The drive to improve ethical standards within the public services, which has lost its momentum in recent years, needs to be revived. More space could be created for civil society to act as a watchdog.

#### Action points:

- Find ways to immunize the institutions that monitor corruption and malfeasance in public services from political contamination and influence
- Integrate Sufficiency principles into the Public Administration Plan, including key performance indicators used for the evaluation of government departments and personnel
- Create a framework based on Sufficiency principles for monitoring decision-making and implementation in public-sector projects
- Reform the Freedom of Information Act so that it truly serves its objective of ensuring that people have access to information.

#### 5. The Sufficiency Economy can guide national policy to immunize a country against shocks, to craft better policies and to plan strategies for more equitable and sustainable growth.

The financial crises that affected the developing world through the 1990s were a stern warning of the dangers and difficulties in the new era of globalization – a period marked by massive and largely unregulated flows of private capital. These crises often were major setbacks to human development – slashing employment, tipping people into poverty and destroying social capital.

The Sufficiency approach, with its emphasis on building inner strength to immunize against internal shocks, can serve as a guide to macro policy making in this unstable environment. In Thailand, since the 1997 crisis, the Sufficiency approach has underpinned a major rethinking of macro policies: reducing exposure to foreign debt, enhancing foreign reserves, insulating currency management from political pressures, using inflation targeting for disciplined management of interest rates, capping government debt, and creating an advance-warning system for future internal and external risks.

The Sufficiency approach can also serve as a disciplined process to lend more focus and coherence to planning development strategies. In national planning, social policies may easily get detached from economic objectives, and risk being ignored in implementation. Under a Sufficiency approach, people are placed firmly at the centre of development strategy; participation is key to implementation; sustainability and equity cannot be ignored; and immunity against shock must be integral. The logical consequences of applying Sufficiency principles to national development is that all of a country's various capitals and resources must be used more efficiently in order to build the inner strengths to manage globalization.

#### Action points:

- Ensure implementation of Thailand's Tenth Plan fulfils its commitment to the Sufficiency Economy, and meets the aspirations of all who contributed to the drafting
- Initiate policies to reverse the decline in the domestic savings rate so that the economy is more self-reliant for capital, and households are better prepared for the future
- Pursue a more consistent energy policy focused on greater self-reliance by accelerating research on substitute fuels and finding more economies in energy usage
- Further develop the deservedly popular universal health scheme using Sufficiency principles to ensure it is efficient and sustainable

## 6. Sufficiency thinking demands a transformation of values and a revolution in the mindset, both necessary for the advancement of human development.

The impact of the Sufficiency approach over the long term depends on embedding the thinking in the culture of development within the country.

The Sufficiency approach begins and ends with people. They are the agents and the beneficiaries. That is the approach's strength, but also its difficulty. As one of the leaders of the Inpaeng community concluded: "It's not an easy job. I know I'll have to work harder." Successful practitioners of the Sufficiency approach seem to share certain personal characteristics. They like to work hard. They are honest. They enjoy learning, experimenting, and cultivating their own wisdom. They are not especially materialistic and are aware of the need for sustainable consumption. They have high respect for nature. They exhibit compassion. In short, they have a particular mindset.

In Thailand now, training in Sufficiency thinking has been integrated into the school curriculum from primary to higher secondary stages, with emphasis on learning from practical experience. Experiments are under way to extend Sufficiency principles into the management and running of schools. These efforts will bear fruit only if they are embraced and "owned" by the teachers and school administrators.

But formal schooling is only one part of a much larger process of education. People learn from their family and from their peers. Their ideas are formed through their own direct experience, and through what they imbibe from media of all kinds. The latter is especially important. With technical advances of recent years, information and entertainment is now available from all over the world. The quality of the packaging is all too easily mistaken for the quality of the product. The selection of what information is available is dictated by the forces of a highly distorted market. The message of Sufficiency is competing in a mental marketplace crowded with products which may seem more glamorous and appealing.

Some ways need to be found to give more exposure to Sufficiency ideas in the public arena while upholding the principles of media freedom. Probably the most important influence is the behaviour of role models and leaders across the spectrum of society from politics to entertainment, from business to the community.

### Action points:

- Upgrade the quality of education, including both content and pedagogical methods, to fulfil the key preconditions of *knowledge* and *integrity* for successful operation of the Sufficiency Economy
- Expand the application of Sufficiency principles in the management and administration of schools
- Provide more support for non-formal education which responds to the needs of communities for life-long learning
- Explore ways to promote Sufficiency thinking within the mass media including more airtime for programming with social content and public participation
- Provide social recognition for people in communities, business, public service, and other sectors who act as leaders or role models of the Sufficiency Economy

## Visionary and courageous leadership

Leadership is paramount. The Sufficiency thinking has been rapidly adopted in Thailand because of the strength of Thailand's movement of community activism.<sup>9</sup> Many leaders, thinkers, and exemplars exist at all levels. In business too, firms across the spectrum of size have adopted Sufficiency principles because of visionary leadership. Within officialdom, some agencies are committed not only to implementation of the thinking but to spreading it more widely within the bureaucracy through example and through osmosis.

Such leadership needs to be passed on to future generations. In both big companies like Siam Cement, and rural community networks like Inpaeng, efforts have been consciously made to train new leaders for the future by inculcating not only skills but values, and by using largely hands-on practical methods of teaching.

<sup>9</sup> See UNDP, *Thailand Human Development Report 2003: Community Empowerment and Human Development*. Bangkok: UNDP, 2003.

There is no question that the Sufficiency thinking has been taken up in Thailand because of the pioneer role of King Bhumibol Adulyadej. The thinking has arisen out of his own concern for his people, especially the most disadvantaged; out of his fascination for practical experiments; out of his ability to articulate a complex idea in simple principles; and out of his readiness to lend his enormous prestige and personal standing to propel the movement. He serves as scientist, philosopher, advocate, and exemplar.

He offers an example of outstanding leadership that might be unique, but is still an inspiration from which the world can learn.

### Avoiding mindless growth

The 1996 Human Development Report issued a warning “to avoid growth that is jobless, ruthless, voiceless, rootless and futureless.” This injunction has become one of the clarion calls of Human Development.

In the light of the Sufficiency Economy approach, it’s time to add another to this list: *mindless growth* – where the path of growth

adds nothing to the mental and spiritual capabilities of people.

Mindless growth can occur when people are pawns in the pursuit of statistics, when they are passive recipients of policy benefits, and when the process of growth fails to develop their knowledge, insight, and confidence to control their own lives.

Avoiding mindless growth means paying attention to education, but even more it means cultivating an approach to development in which people participate, build their own self-reliance, gain the knowledge and insight to move ahead in stages, and develop themselves *as people* in the fullest sense, including their mental capacity and spiritual well-being.

The Sufficiency Economy offers a way to avoid mindless growth through application of a set of principles which can seem disarmingly simple, but which are rooted in observation of the real world, and underwritten by humanist theory. The appeal of the approach is that the principles are easy to grasp, but the daunting fact is that the application demands high standards of commitment and integrity. But then, if development was easy...

#### Box 4.2 Sufficiency in the mind

In the *Mahajanaka* story, the prince is rescued by the goddess, and returns to his kingdom to reign for seven thousand years. One day he visits the Royal Park. At the entrance, there are two mango trees, one laden with fruit and the other bare. The King tastes a mango from the first tree and proceeds into the park. People following behind rush to pick the other fruit of the first tree. In their haste, they break the branches, strip the leaves, and finally uproot the tree through careless use of an automated harvester.

The King returns and is saddened by the sight. He draws a conclusion: *the second tree was better off for having no fruit.*

The King was tempted to renounce all his possessions, including the throne, and seek enlightenment.

Remembering his promise to the goddess, the King also took two actions before withdrawing.

First, he applied natural methods and technology to revive the first tree.

Second, he also founded an “institute of higher learning” to teach “not only technical knowledge but also common knowledge, i.e. common sense,” and the virtue of perseverance which he learnt from his ordeal in the sea.



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# ANNEX



## Human Achievement Index

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# Human Achievement Index

## Assessing Human Development with HAI

The Human Achievement Index (HAI) is a composite index developed to assess the state of human development at a sub-national level.

- **HAI is composed of eight indices, based on 40 indicators.** It follows a human's lifecycle, starting with the first essential thing that everyone must have on 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 have decent *housing and living environment*, to enjoy *family and community life*, to establish *contacts and communications* with others, and, last but not least, to *participate* as a member of society.
- **HAI is the only human development index at the provincial level.** Although several indices have been developed in the past few years, none provide an overall assessment of the human development situation that allows for comparison of the 76 provinces. HAI is, therefore, a useful tool for capturing disparity patterns at the provincial level to allow for relevant policy-making and effective operational undertakings.
- **HAI, as a composite index, provides an overall ranking of the provinces**, which should be understood as indicative, not definitive, of levels of overall human development.
- **HAI does not count the uncounted.** For example, ethnic minorities and non-registered migrants, especially those living and working along the borders, are not included in official statistics used in these calculations of HAI.

## HAI methodology and data

HAI applies the methodology used in the calculation of the Human Development Index (HDI).<sup>10</sup> For each indicator, the following calculation is used for each province:

$$\frac{\text{Actual value} - \text{Minimum value}}{\text{Maximum value} - \text{Minimum value}}$$

The minimum and maximum values are set for each indicator to serve as “goal post” which covers a range for that indicator in the next ten years. The goal post set for each indicator is shown in Table A1.2<sup>11</sup>

For some indicators, for example unemployment and 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 individual 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 is an average of all seven indicators. Also, all eight indices carry equal weight in calculating the composite HAI.

HAI uses secondary data that do not require laborious processing. But the data must have national coverage with provincial disaggregation. Several indicators, such as life expectancy at birth, were dropped because provincial data are not available. Most data are from surveys that are conducted every two to three years. Most administrative data are updated annually.

Data are certainly much less reliable at the provincial level, due to small sample sizes for

<sup>10</sup> For more details, see UNDP, *Thailand Human Development Report 2003*.

<sup>11</sup> For an indicator that combines two or more incidences, the maximum value may exceed 100 per cent. One example is the percentage of population affected by flood and/or drought, which is the sum of the percentages of the population affected by flood and by drought, and may contain duplication.

survey data,<sup>12</sup> inconsistent data collection methods for administrative data,<sup>13</sup> and so on. Another caveat is the data coverage. For example, ethnic minorities and non-registered migrants especially those living and working along the border are not included in official statistics used in the calculation of HAI.

But acknowledging this constraint when using the data is better than ignoring the data. HAI will highlight the social and economic disparity, as well as draw attention to the data needed for monitoring development.

### HAI 2003 compared with HAI 2006

HAI is still a work-in-progress, and HAI 2006 departs from HAI 2003 for a number of reasons, such as lack of up-to-date data or availability of new or better data, and change or addition of indicators to address current development challenges. Hence, HAI 2006 cannot be compared with HAI 2003 index by index. But

as the concept and about two thirds of the indicators remain the same, comparison may be made at the composite level to show some trends in the overall development pattern.

The rankings did not change much at the top echelon (see Table AI.1). Seven provinces retain their position in the top ten: Bangkok, Nonthaburi, Pathum Thani, and Nakhon Pathom in Bangkok Vicinity; Rayong, the industrial centre of the East; Songkhla and Phuket, the business and tourism centres in the South.

Changes are more noticeable at the lower end. In HAI 2003, nine out of the bottom ten provinces were from the Northeast. In HAI 2006, only half are in that region. Three of these were in the bottom ten in 2003: Nakhon Phanom, Si Sa Ket, and Nong Bua Lam Phu. So too was Mae Hong Son, which is now joined by three other northern provinces. Narathiwat, in the deep South, is in the bottom ten list for the first time.

**Table AI.1 Top and bottom ten provinces from HAI 2003 and HAI 2006**

Top Ten Provinces		Bottom Ten Provinces	
HAI 2003	HAI 2006	HAI 2003	HAI 2006
1. Phuket (South)	1. Phuket (South)	67. Mae Hong Son (North)	67. Nong Bua Lam Phu (Northeast)
2. Nonthaburi (Bangkok Vicinity)	2. Bangkok	68. Nong Khai (Northeast)	68. Phetchabun (North)
3. Chon Buri (East)	3. Pathum Thani (Bangkok Vicinity)	69. Mukdahan (Northeast)	69. Nakhon Phanom (Northeast)
4. Nakhon Pathom (Bangkok Vicinity)	4. Ayutthaya (Centre)	70. Udon Thani (Northeast)	70. Chaiyaphum (Northeast)
5. Songkhla (South)	5. Nonthaburi (Bangkok Vicinity)	71. Sakon Nakhon (Northeast)	71. Narathiwat (South)
6. Bangkok	6. Songkhla (South)	72. Amnat Charoen (Northeast)	72. Si Sa Ket (Northeast)
7. Rayong (East)	7. Sing Buri (Centre)	73. Nong Bua Lam Phu (Northeast)	73. Kamphaeng Phet (North)
8. Lumphun (North)	8. Nakhon Pathom (Bangkok Vicinity)	74. Buri Ram (Northeast)	74. Surin (Northeast)
9. Samut Songkhram (West)	9. Rayong (East)	75. Si Sa Ket (Northeast)	75. Tak (North)
10. Pathum Thani (Bangkok Vicinity)	10. Samut Prakan (Bangkok Vicinity)	76. Nakhon Phanom (Northeast)	76. Mae Hong Son (North)

<sup>12</sup> The reliability of the provincial survey data is of less concern for simple questions with binary answers such as "Do you have internet access or not?", "Have you been sick in the past two weeks?" It is more problematic for questions with a broad range of possible answers.

<sup>13</sup> Among common problems with administrative data are data coverage, biased data collection and reportage.



Table AI.2 Structure of the Human Achievement Index

HAI Indices	Components	Indicators	Min	Max
<b>1. Health Index</b>	1. Quality of life	1. Underweight birth (%)	5	25
		2. Population with physical illness (%)	5	45
		3. Population with disability and/or chronic health problems (%)	2	8
		4. AIDS incidence (per 100,000)	0	65
		5. Population with mental illness (per 1,000)	0	100
	2. Health promotion	6. Unhealthy behaviour (%)	15	60
	3. Health infrastructure	7. Population per physician (persons)	600	20,000
<b>2. Education Index</b>	4. Stock of education	8. Mean years of schooling for people aged 15+ (years)	3	12
	5. Flow of education	9. Upper secondary and vocational enrolment (%)	15	101
	6. Quality of education	10. Average score of lower secondary students (%)	30	65
	7. Educational infrastructure	11. Lower secondary students per classroom (students)	20	60
<b>3. Employment Index</b>	8. Employment	12. Unemployment (%)	0	8
		13. Underemployment (%)	0	30
	9. Labour protection	14. Employees covered by social security (%)	1	125
		15. Occupational injuries (per 1,000 workers)	0	100
<b>4. Income Index</b>	10. Income level	16. Household monthly income (Baht)	4,000	30,000
	11. Poverty	17. Poverty incidence (%)	0	60
	12. Debt	18. Households with debts (%)	20	90
<b>5. Housing and Living Environment Index</b>	13. Housing security	19. Households living in own house and on own land (%)	25	100
	14. Basic appliances	20. Households having refrigerator (%)	30	100
		21. Households cooking with gas or electric stove (%)	10	100

Table AI.2 Structure of the Human Achievement Index (continued)

HAI Indices	Components	Indicators	Min	Max
	15. Living environment	22. Population affected by flood and/or drought (%)	0	120
		23. Households not affected by pollution (%)	70	100
<b>6. Family and Community Life Index</b>	16. Family life	24. Orphans, abandoned children, children affected by AIDS (per 1,000)	0	15
		25. Working children aged 15-17 (%)	0	60
		26. Single-headed households (%)	10	30
		27. Elderly living alone (%)	0	14
	17. Safety	28. Violent crimes reported (per 100,000)	0	85
		29. Drug-related arrests (per 100,000)	15	680
<b>7. Transportation and Communication Index</b>	18. Transport	30. Villages with all-season main roads (%)	25	100
		31. Vehicle registration (per 1,000)	70	1,100
		32. Road surface (km/provincial area)	0	1
		33. Land traffic accidents (per 100,000)	10	1,000
	19. Communication	34. Households having access to TV (%)	40	100
		35. Population having mobile phone (%)	1	70
		36. Population having internet access (%)	1	30
<b>8. Participation Index</b>	20. Political participation	37. Voter turnout (%)	50	100
	21. Civil society participation	38. Community groups (per 100,000)	4	450
		39. Households participating in local groups (%)	70	100
		40. Participation in social services and unpaid services to other households (hours/day)	0.7	3.9

## The Eight HAI Indices

### Health Index

Health is the most basic component of well being. The Health Index, constructed from data on *underweight birth, disability and/or chronic health problems, physical illness, AIDS incidence,*

*mental illness, unhealthy behaviour, and physician per population,* is meant to capture the overall quality of physical and mental health, as well as the propensity for future health.

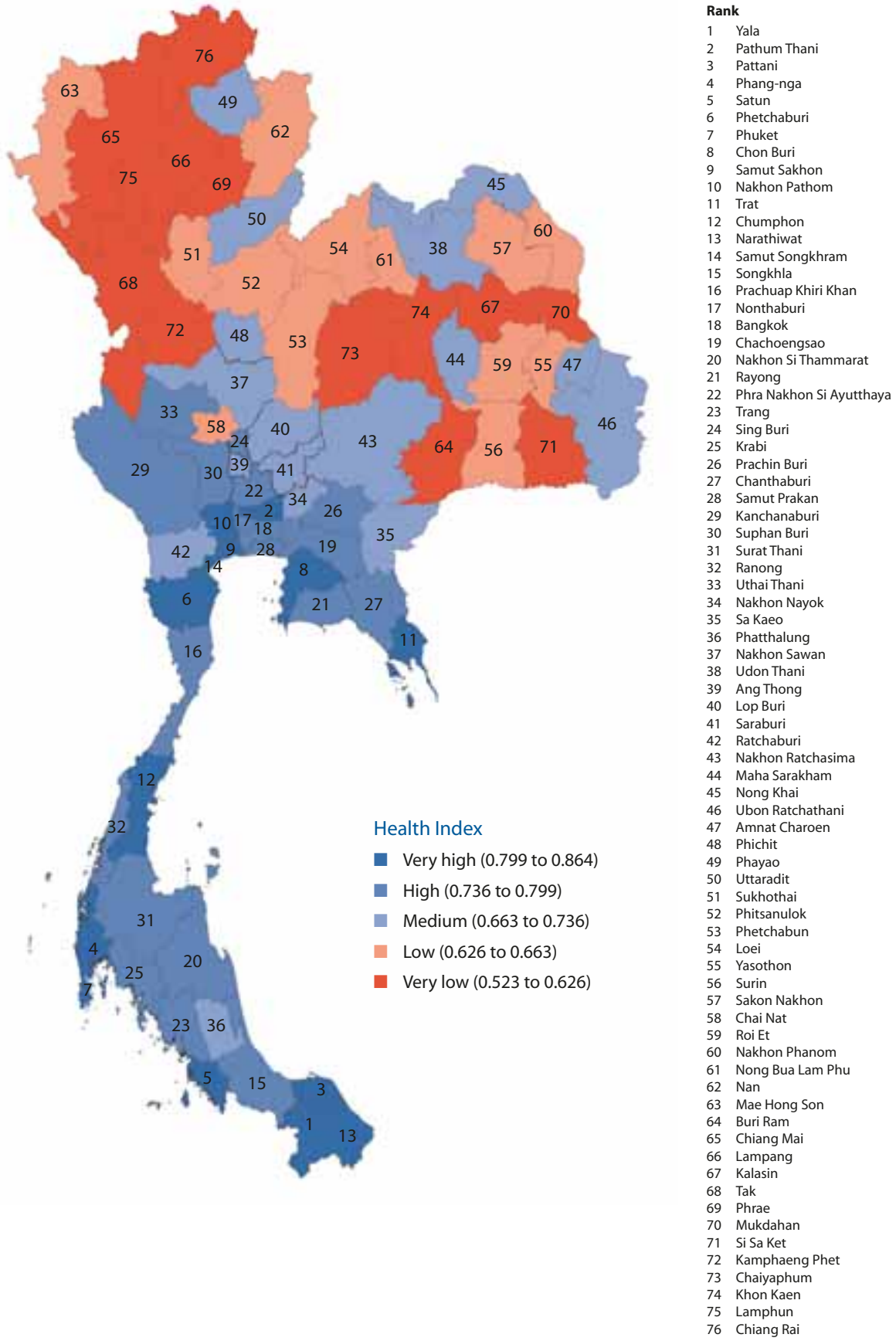
**Table AI.3 Five best and worst performers on health indicators**

Underweight births (%)	Population with physical illness (%)	Population with disability and/or chronic health problems (%)	AIDS incidence (half year per 100,000)	Population with mental illness (per 1,000)	Unhealthy behaviour: smoking and/or drinking (%)	Population per physician (persons)
<b>Five best</b>						
Maha Sarakham (6.8)	Phang-nga (7.3)	Yala (2.3)	23 provinces (<0.1)	Roi Et, Pattani (2)	Sing Buri (18.5)	Bangkok Metropolitan (879)
Ranong (7.2)	Samut Sakhon (8.6)	Phuket (2.8)		Yala, Satun, Uttaradit (5)	Pattani (22.7)	Nakhon Nayok (1,406)
Roi Et (7.3)	Phetchaburi (9.7)	Nakhon Si Thammarat (2.9)		Nong Khai, Nakhon Si Thammarat, Phetchaburi, Pathum Thani, Mukdahan, Nan (6)	Phang-nga (24.6)	Phuket (1,700)
Trat (7.4)	Yala, Ranong (9.9)	Satun (3.0)		Phuket, Samut Sakhon, Maha Sarakham (7)	Nonthaburi (24.9)	Songkhla (1,738)
Samut Songkhram, Nong Khai, Pattani (7.7)	Pathum Thani (10.2)	Narathiwat, Nonthaburi (3.1)		Chacheongsao, Uthai Thani, Phang-nga (8)	Narathiwat, Pathum Thani (25.6)	Chon Buri (1,858)
<b>Five worst</b>						
Mukdahan (11.1)	Uttaradit (31.7)	Phrae (6.4)	Rayong (15.8)	Loei (34)	Lamphun (49.6)	Nong Bua Lam Phu (10,811)
Chiang Rai, Chiang Mai (11.8)	Chai Nat (36.1)	Mukdahan, Nong Khai (6.7)	Nakhon Nayok (17.3)	Lamphun (37)	Phayao (49.7)	Chaiyaphum (10,846)
Lamphun (12.4)	Kamphaeng Phet (39.3)	Si Sa Ket (7)	Ratchaburi (18.3)	Khon Kaen (45)	Tak (51.3)	Sakon Nakhon (10,967)
Mae Hong Son (18.3)	Khon Kaen (41.8)	Buri Ram (7.3)	Phuket (18.4)	Chaiyaphum (46)	Nan (52.9)	Phetchabun (11,283)
Tak (20.3)	Chiang Rai (42.8)	Chaiyaphum (7.7)	Ranong (40)	Nakhon Phanom, Nonthaburi, Saraburi (52)	Chiang Rai (57.0)	Si Sa Ket (12,210)

**Remarks:**

- Provincial data on AIDS incidence from the Department of Disease Control were 10 times smaller than the national estimate, and were considered highly underreported, but they are useful for gauging geographical distribution.
- Data on mental illness is, to some extent, biased against provinces with large mental health facilities.

**Figure AI.1 Health Index**



## Education Index

Education enables people to function effectively in a society and realize their potential. The Education Index covers *mean years of schooling, upper secondary and vocational enrolment, lower secondary test scores, and lower secondary students per classroom.*

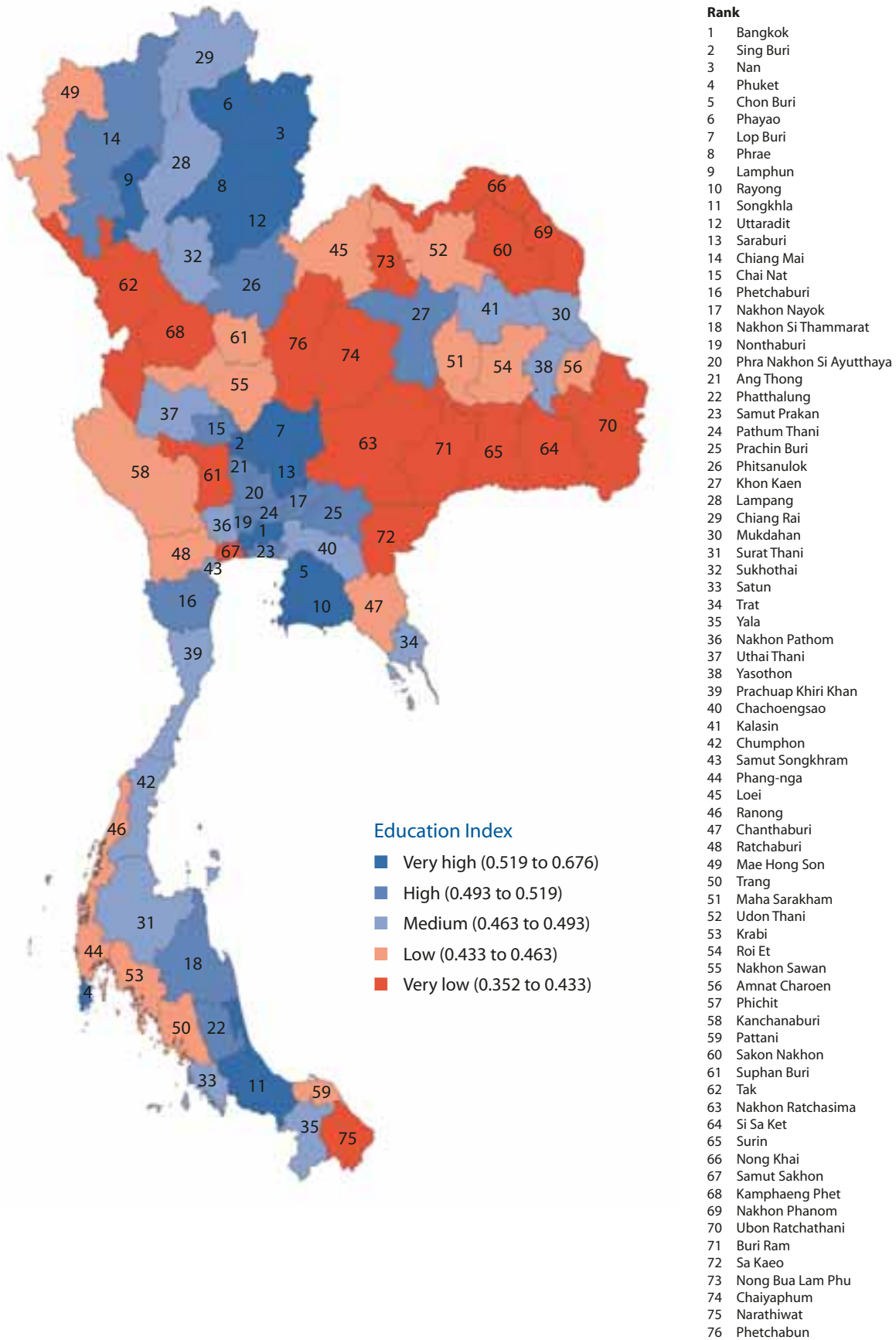
**Table AI.4 Five best and worst performers on education indicators**

Mean years of schooling (years)	Upper secondary and vocational enrolment (%)	Average score of lower secondary students (%)	Lower secondary students per classroom (students)
<b>Five best</b>			
Nonthaburi (10.9)	Bangkok (100.5)	Bangkok (44.5)	Sing Buri (26)
Bangkok (10.8)	Sing Buri (85.0)	Samut Prakan (44.1)	Mae Hong Son, Phetchabun (28)
Pathum Thani (10.2)	Chon Buri (84.1)	Nonthaburi (42.3)	Trat (30)
Phuket (10)	Lampang (82.5)	Phuket (41.8)	Nan, Uthai Thani, Lamphun, Yasothon, Loei (31)
Samut Prakan (9.9)	Sukhothai (79.2)	Rayong (41.4)	Phichit, Mukdahan, Phatthalung, Chai Nat, Phrae, Khampaeng Phet, Kalasin (32)
<b>Five worst</b>			
Nakhon Ratchasima, Phichit, Phetchabun (7.1)	Nakhon Phanom (43.6)	Narathiwat (33.9)	Songkhla, Samut Songkhram, Krabi (39)
Loei, Ubon Ratchathani (7.0)	Mae Hong Son (42.8)	Nakhon Ratchasima (33.8)	Chumphon, Samut Sakhon, Chanthaburi, Trang (40)
Buri Ram, Kamphaeng Phet (6.9)	Samut Sakhon (41.7)	Sa Kaeo (33.3)	Pathum Thani, Samut Prakan, Ratchaburi (41)
Chaiyaphum, Sukhothai (6.8)	Narathiwat (35.2)	Nong Bua Lam Phu (32.5)	Bangkok, Chon Buri (42)
Yasothon (6.7)	Phetchabun (15.2)	Chaiyaphum (31.9)	Nakhon Pathom, Pattani, Nonthaburi, Phuket (43)

### Remarks:

- The Office of the National Education Council estimated the mean years of schooling for 2005 at 8.5. According to the NSO's Labour Force Survey, 3rd Quarter, 2005 data (used to calculate this Index), the mean years of schooling for the population aged 15 or over was 8.2.
- Upper secondary and vocational enrolment in Bangkok is over 100%. This is a gross, not net enrolment figure. Gross enrolment rate is calculated from the number of students, regardless of ages that are enrolled at that educational level and the total number of children in the specific age group – 15–17 years old for upper secondary and vocational level. The calculation for net enrolment includes only students in that particular age group. A high level of gross enrolment rate is often a result of over-aged students. But in Bangkok, the over 100% figure is likely to represent out-of-province students who migrate or commute to study in Bangkok-based schools.
- The average scores are from the national assessment test administered by the Ministry of Education on students in grade 6 (primary level), grade 9 (lower secondary level), and grade 12 (upper secondary level), randomly selected from all educational areas. The total number of samples for each level is approximately 175,000. For the lower secondary level, the test includes Thai, English, Mathematics, Science and Social Studies.
- Ironically, provinces that successfully mobilize students into school face shortage in education infrastructure, while provinces that have difficulty enrolling students have much less crowded classrooms. The average scores, however, show that crowded classrooms are not a significant barrier to educational achievement.

**Figure AI.2 Education Index**



## Employment Index

Gainful employment does not only provide a means of living, it also represents a manifestation of people's capacity to realize their potential. Employment is also a fundamental basis for security and protection. The Employment Index covers *unemployment, underemployment, social security and occupational injuries*.

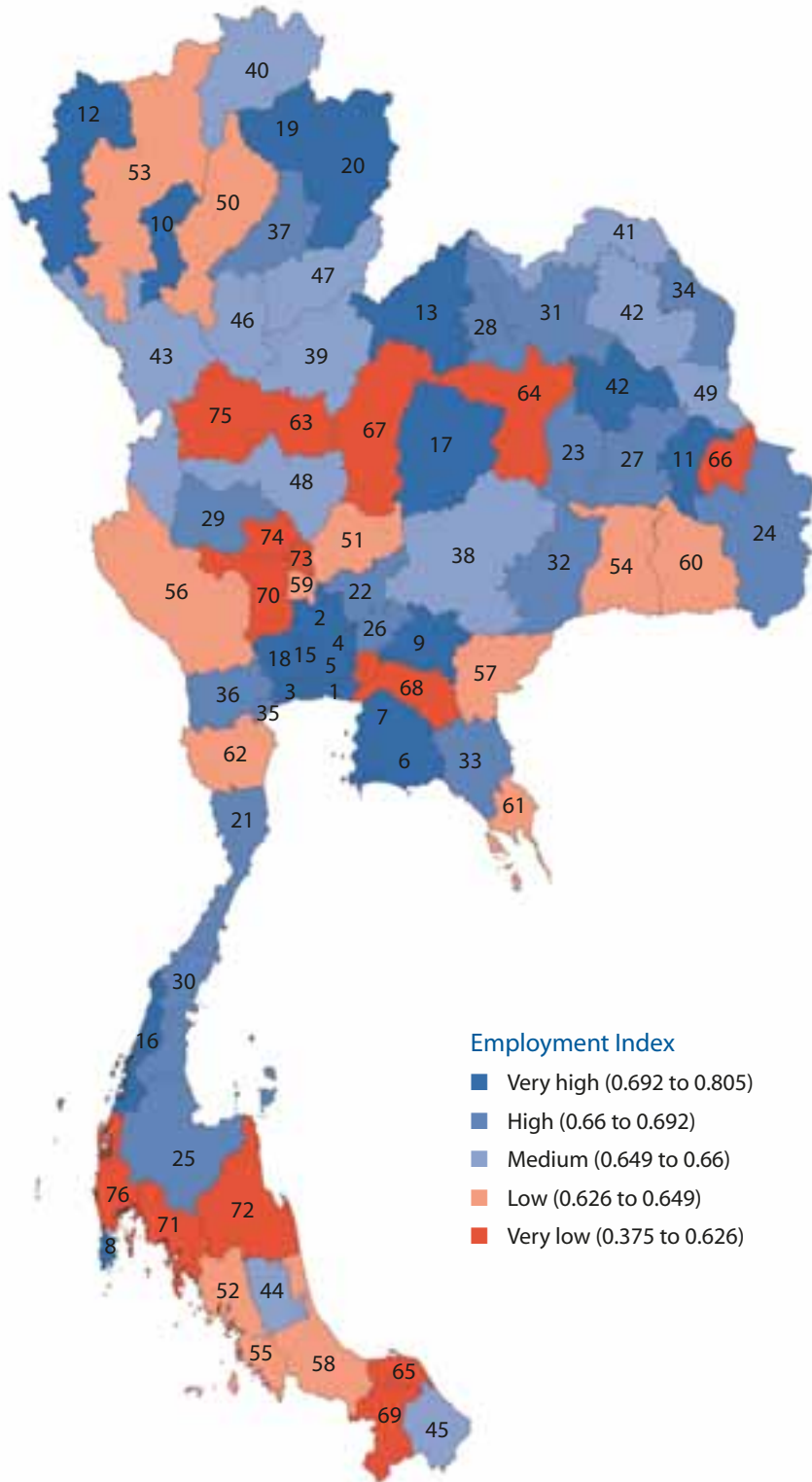
**Table AI.5 Five best and worst performers on employment indicators**

Unemployment (%)	Underemployment (%)	Social security coverage (%)	Occupational injuries (per 1,000)
<b>Five best</b>			
Yasothon (0.03)	Nonthaburi, Samut Songkhram (0.0)	Samut Prakan (123.8)	Mae Hong Son (3.8)
Loei (0.05)	Nan (0.02)	Samut Sakhon (100.3)	Maha Sarakham (5.4)
Roi Et (0.11)	Chon Buri (0.05)	Pathum Thani (86.8)	Nakhon Phanom (5.5)
Nakhon Sawan (0.15)	Bangkok (0.06)	Ayutthaya (79.7)	Yasothon (6.5)
Kalasin (0.19)	Nakhon Phanom (0.08)	Rayong (78.7)	Amnat Charoen (7.0)
<b>Five worst</b>			
Songkhla (2.41)	Satun (4.40)	Nong Khai (2.9)	Nakhon Sawan (40.8)
Sing Buri (2.66)	Mukdahan (5.34)	Surin (2.8)	Samut Sakhon (46.3)
Khon Kaen (3.01)	Si Sa Ket (7.80)	Mae Hong Son (2.6)	Yala (46.7)
Chachoengsao (3.13)	Krabi (8.60)	Si Sa Ket, Amnat Charoen (1.8)	Samut Prakan (61.8)
Amnat Charoen (3.18)	Phang-nga (17.41)	Nong Bua Lam Phu (1.7)	Phang-nga (86.7)

Remarks:

- Underemployment is defined as working less than 35 hours/week and willing to work more. Underemployment has been exceptionally but consistently high in Phang-nga. This may be due to the timing of the data collection. In most parts of the country, the rainy season is when employment is generally higher and underemployment generally lower than other times of the year. But in the South, the situation is the opposite, as the rainy season is the low season for both the rubber and tourist industries. Phang-nga is heavily dependent on these two sectors.
- Social security coverage is high in industrial areas where most people are employed in the formal sector. The coverage appears higher than 100 per cent in Samut Prakan and Samut Sakhon due to inconsistencies in the data. The number of workers is taken from the NSO's Labour Force Survey while the number of employees having social security is an administrative record from the Social Security Office.
- Occupational injuries are unusually high in Phang-nga in 2005, due to the tsunami in December 2004.

**Figure AI.3 Employment Index**



**Rank**

- 1 Samut Prakan
- 2 Phra Nakhon Si Ayutthaya
- 3 Samut Sakhon
- 4 Pathum Thani
- 5 Bangkok
- 6 Rayong
- 7 Chon Buri
- 8 Phuket
- 9 Prachin Buri
- 10 Lamphun
- 11 Yasothon
- 12 Mae Hong Son
- 13 Loei
- 14 Kalasin
- 15 Nonthaburi
- 16 Ranong
- 17 Chaiphaphum
- 18 Nakhon Pathom
- 19 Phayao
- 20 Nan
- 21 Prachuap Khiri Khan
- 22 Saraburi
- 23 Maha Sarakham
- 24 Ubon Ratchathani
- 25 Surat Thani
- 26 Nakhon Nayok
- 27 Roi Et
- 28 Nong Bua Lam Phu
- 29 Uthai Thani
- 30 Chumphon
- 31 Udon Thani
- 32 Buri Ram
- 33 Chanthaburi
- 34 Nakhon Phanom
- 35 Samut Songkhram
- 36 Ratchaburi
- 37 Phrae
- 38 Nakhon Ratchasima
- 39 Phitsanulok
- 40 Chiang Rai
- 41 Nong Khai
- 42 Sakon Nakhon
- 43 Tak
- 44 Phatthalung
- 45 Narathiwat
- 46 Sukhothai
- 47 Uttaradit
- 48 Nakhon Sawan
- 49 Mukdahan
- 50 Lampang
- 51 Lop Buri
- 52 Trang
- 53 Chiang Mai
- 54 Surin
- 55 Satun
- 56 Kanchanaburi
- 57 Sa Kaeo
- 58 Songkhla
- 59 Ang Thong
- 60 Si Sa Ket
- 61 Trat
- 62 Phetchaburi
- 63 Phichit
- 64 Khon Kaen
- 65 Pattani
- 66 Amnat Charoen
- 67 Phetchabun
- 68 Chachoengsao
- 69 Yala
- 70 Suphan Buri
- 71 Krabi
- 72 Nakhon Si Thammarat
- 73 Sing Buri
- 74 Chai Nat
- 75 Kamphaeng Phet
- 76 Phang-nga



## Income Index

To a large extent, income is the basis for a decent standard of living. It cannot buy happiness, but it safeguards against poverty.

Debt is often a sign of inadequate income. The Income Index covers *household income, poverty incidence, and households with debt.*

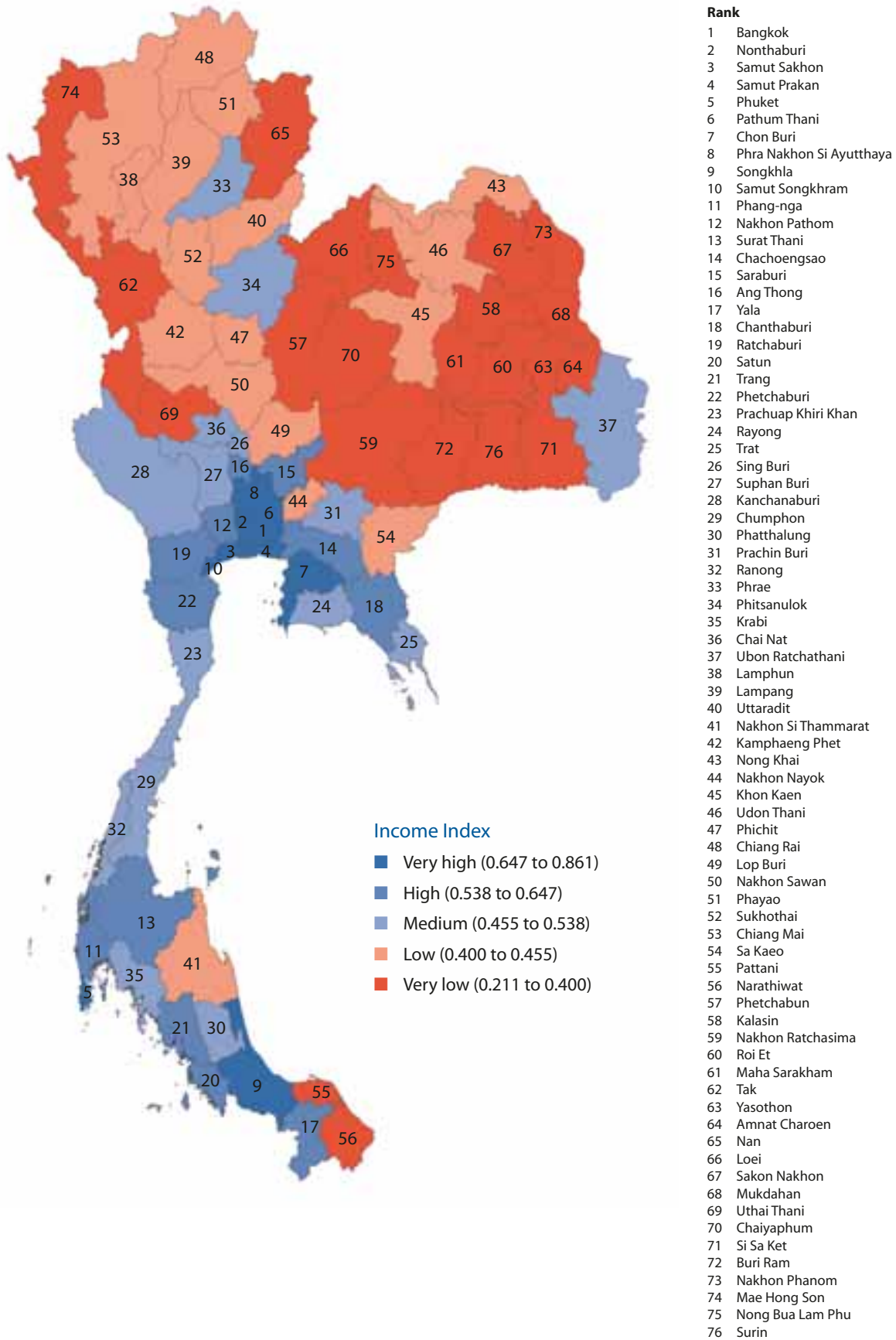
**Table A1.6 Five best and worst performers on income indicators**

Household income (Baht per month)	Poverty incidence (%)	Households with debt (%)
<b>Five best</b>		
Bangkok (29,425)	Pathum Thani, Surat Thani (0)	Samut Sakhon (29.1)
Nonthaburi (28,907)	Phuket (0.21)	Ayutthaya (39.7)
Phuket (26,017)	Samut Prakan (0.31)	Samut Prakan (43.6)
Pathum Thani (22,653)	Phang-nga (0.55)	Samut Songkhram (44.5)
Samut Prakan (19,594)	Nonthaburi (0.57)	Bangkok (45.8)
<b>Five worst</b>		
Nong Bua Lam Phu (6,943)	Tak (29.60)	Buri Ram (83.7)
Mae Hong Son (6,681)	Sakon Nakhon (30.16)	Si Sa Ket (84.4)
Surin (6,485)	Nakhon Phanom (32.27)	Roi Et (85.2)
Uthai Thani (6,407)	Mae Hong Son (33.95)	Maha Sarakham (85.5)
Yasothon (6,018)	Surin (33.97)	Amnat Charoen (86.2)

Remarks:

- Poverty incidence takes into account both income and expenditure. It represents people whose income in cash and in kind is insufficient to cover necessary subsistence expenses.
- Average household debt is generally a good indicator of indebtedness, but some well-off provinces have high debt figures due to business loans. Poverty-stricken provinces in the Northeast have higher proportion of indebted households; their debts are mostly for consumption and are therefore more difficult to finance.

**Figure AI.4 Income Index**



## Housing and Living Environment Index

A decent livelihood requires secured housing, basic appliances and a safe living environment. The Housing and Living Environment Index

covers *housing security, possession of basic appliance, e.g. refrigerator and electric or gas stove, exposure to flood and/or drought, pollution.*

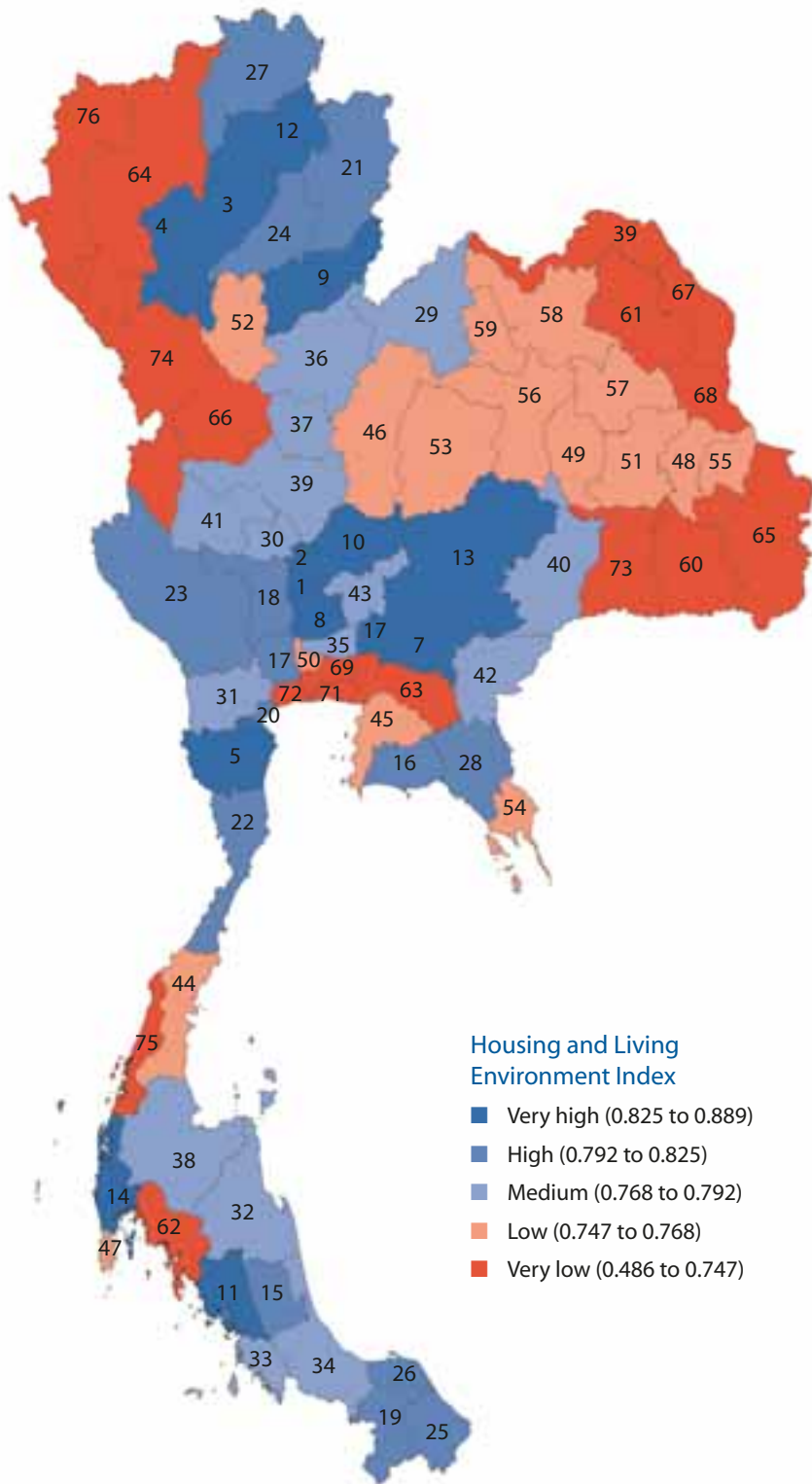
**Table AI.7 Five best and worst performers on housing and living environment indicators**

Housing Security (%)	Households having refrigerator (%)	Households having gas or electric stove (%)	Population affected by drought and/or flood (%)	Households not affected by pollution (%)
<b>Five best</b>				
Yasothon, Roi Et (96.8)	Phang-nga (94.0)	Rayong (96.7)	Nakhon Pathom, Nonthaburi, Pathum Thani, Samut Sakhon (0)	Buri Ram (100)
Surin (95.0)	Phrae (93.9)	Nakhon Nayok (95.3)	Ang Thong (.90)	Samut Songkhram (99.4)
Si Sa Ket (94.9)	Ayutthaya (92.2)	Surat Thani (93.2)	Bangkok (1.01)	Yasothon, Phuket (99.3)
Nakhon Phanom (94.4)	Nakhon Nayok (92.0)	Suphan Buri (92.0)	Sing Buri (1.23)	Roi Et (99.1)
Udon Thani (94.3)	Rayong (91.0)	Nakhon Pathom (91.4)	Pattani (1.35)	Amnat Charoen (99.0)
<b>Five worst</b>				
Phuket, Chon Buri (47.4)	Pattani (61.5)	Nakhon Phanom (46.2)	Phrae (57.63)	Phatthalung (89.2)
Nonthaburi (41.5)	Si Sa Ket (61.3)	Ubon Ratchathani (43.0)	Udon Thani (57.73)	Saraburi (88.8)
Samut Sakhon (37.2)	Surin (60.4)	Yasothon (42.8)	Surin (66.27)	Samut Sakhon (87.5)
Bangkok (34.7)	Narathiwat (60.3)	Mae Hong Son (39.7)	Nong Khai (80.81)	Surat Thani (86.6)
Samut Prakan (30.1)	Mae Hong Son (46.8)	Mukdahan (39.4)	Ranong (108.20)	Kamphaeng Phet (82.2)

### Remarks:

- Housing security is defined as having ownership of the house and the land on which the house is located. This is more stringent than the MDG definition of ownership/lease purchase/rent.
- The number of people affected by drought and the number of people affected by flood are combined for the calculation of the percentage of population affected by drought and/or flood. In some cases, this means double counting, but it reflects the plight of those who are encountered by both drought and flood. This, however, was not the reason for the exceptionally high figure for Ranong where the percentage of people affected by flood was negligible, but the percentage of people affected by drought alone was higher than 100 percent representing another case of data inconsistency.
- Data on population affected by drought and/or flood do not include those affected by the tsunami in Phuket, Phang-nga, Krabi, Ranong, Satun and Trang in December 2004.
- Data on number of people affected by drought and/or flood, and the number of households not affected by pollution are not available for Bangkok. Bangkok Vicinity is used as proxy for Bangkok on this measure.

**Figure AI.5 Housing and Living Environment Index**



**Rank**

- 1 Ang Thong
- 2 Sing Buri
- 3 Lampang
- 4 Lamphun
- 5 Phetchaburi
- 6 Phra Nakhon Si Ayutthaya
- 7 Prachin Buri
- 8 Nakhon Nayok
- 9 Uttaradit
- 10 Lop Buri
- 11 Trang
- 12 Phayao
- 13 Nakhon Ratchasima
- 14 Phang-nga
- 15 Phatthalung
- 16 Rayong
- 17 Nakhon Pathom
- 18 Suphan Buri
- 19 Yala
- 20 Samut Songkhram
- 21 Nan
- 22 Prachuap Khiri Khan
- 23 Kanchanaburi
- 24 Phrae
- 25 Narathiwat
- 26 Pattani
- 27 Chiang Rai
- 28 Chanthaburi
- 29 Loei
- 30 Chai Nat
- 31 Ratchaburi
- 32 Nakhon Si Thammarat
- 33 Satun
- 34 Songkhla
- 35 Pathum Thani
- 36 Phitsanulok
- 37 Phichit
- 38 Surat Thani
- 39 Nakhon Sawan
- 40 Buri Ram
- 41 Uthai Thani
- 42 Sa Kaeo
- 43 Saraburi
- 44 Chumphon
- 45 Chon Buri
- 46 Phetchabun
- 47 Phuket
- 48 Yasothon
- 49 Maha Sarakham
- 50 Nonthaburi
- 51 Roi Et
- 52 Sukhothai
- 53 Chaiyaphum
- 54 Trat
- 55 Amnat Charoen
- 56 Khon Kaen
- 57 Kalasin
- 58 Udon Thani
- 59 Nong Bua Lam Phu
- 60 Si Sa Ket
- 61 Sakon Nakhon
- 62 Krabi
- 63 Chachoengsao
- 64 Chiang Mai
- 65 Ubon Ratchathani
- 66 Kamphaeng Phet
- 67 Nakhon Phanom
- 68 Mukdahan
- 69 Bangkok
- 70 Nong Khai
- 71 Samut Prakan
- 72 Samut Sakhon
- 73 Surin
- 74 Tak
- 75 Ranong
- 76 Mae Hong Son

## Family and Community Life

Everyone needs a family and a community life. Strong family and community ties provide necessary emotional support and are the most reliable social safety net. A stressful family life, on the other hand, places extra burden on all family members. Communities that are beset

with social problems also expose their members to human insecurity. The Family and Community Life index covers *orphans/abandoned children/children affected by AIDS, working children, single-headed households, elderly living alone, violent crimes, drug-related arrests.*

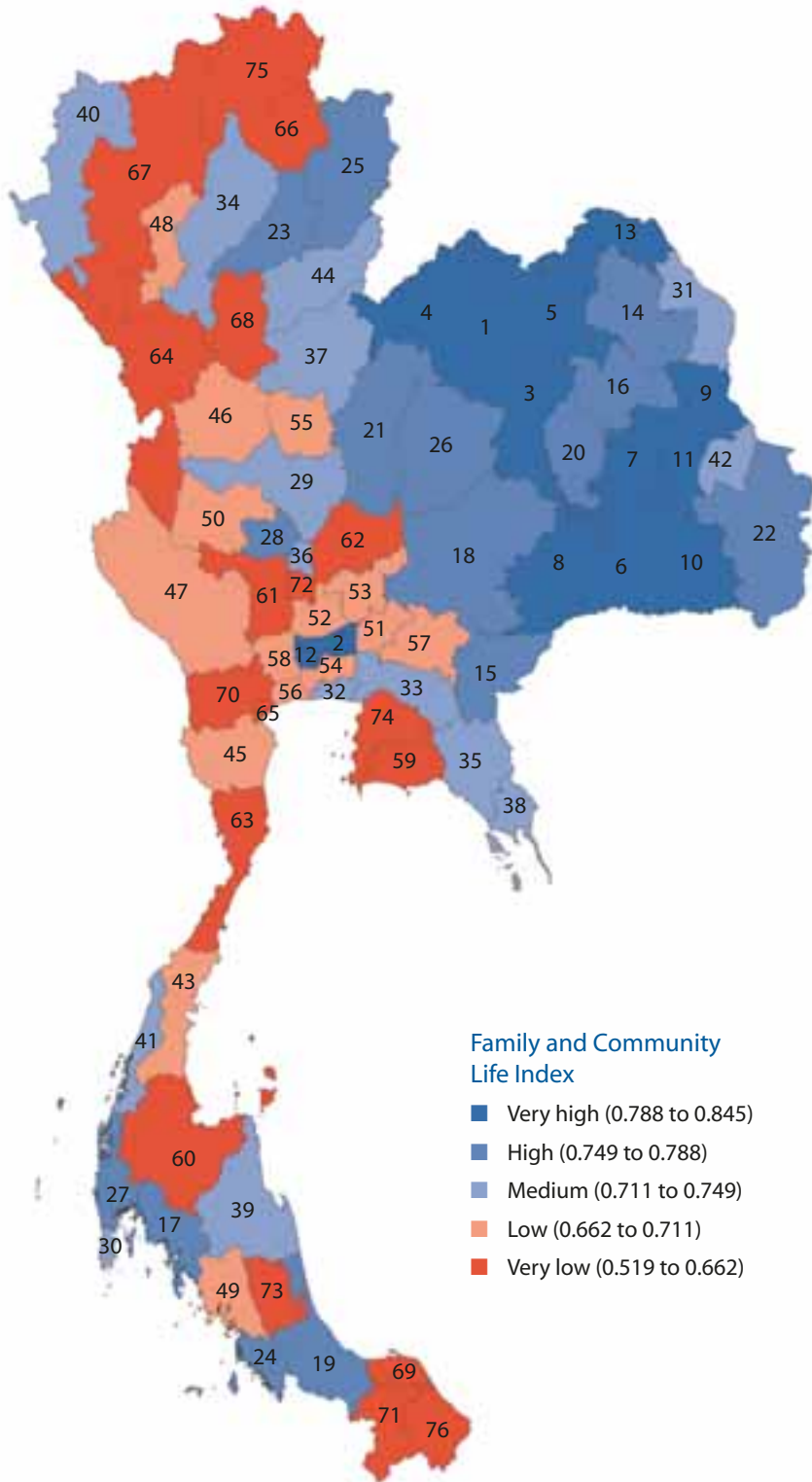
**Table AI.8 Five best and worst performers on family and community life indicators**

Orphans, abandoned children, children affected by AIDS (per 1,000)	Working children aged 15-17 (%)	Single-headed households (%)	Elderly living alone (%)	Violent crimes reported (per 100,000)	Drug-related arrests (per 100,000)
<b>Five best</b>					
Nonthaburi (0.07)	Roi Et (4.6)	Si Sa Ket (10.0)	Pathum Thani (1.8)	Yasothon (1.3)	Surin (17.6)
Samut Sakon (0.14)	Phrae (5.4)	Pathum Thani (10.3)	Samut Prakan (2.5)	Sakon Nakhon (2.4)	Buri Ram (28.1)
Pathum Thani (0.15)	Maha Sarakham (6.6)	Samut Sakon (10.6)	Udon Thani (2.6)	Roi Et (2.6)	Udon Thani (38.0)
Sing Buri (0.22)	Phayao (8.7)	Samut Prakan (10.7)	Yasothon, Nonthaburi (2.7)	Si Sa Ket (2.8)	Si Sa Ket (38.4)
Bangkok (0.31)	Khon Kaen (9.0)	Mukdahan (11.4)	Loei (2.8)	Amnat Charoen, Buri Ram (3.0)	Roi Et (38.6)
<b>Five worst</b>					
Si Sa Ket (4.73)	Sukhothai (33.0)	Nakhon Nayok (22.9)	Phichit (10.4)	Samut Sakhon (40.7)	Ang Thong (359.8)
Narathiwat (5.37)	Phang-nga (34.6)	Prachin Buri (23.2)	Chiang Rai (11.1)	Narathiwat (54.0)	Chiang Rai (410.7)
Chiang Mai (5.77)	Ratchaburi (37.4)	Ang Thong (24.8)	Uthai Thani (11.2)	Pattani (55.6)	Samut Prakan (476.9)
Chiang Rai (9.78)	Samut Sakhon (45.3)	Lop Buri (24.9)	Lamphun (11.7)	Yala (56.0)	Bangkok (533.6)
Phayao (10.04)	Mae Hong Son (49.8)	Ratchaburi (25.7)	Tak (11.8)	Phatthalung (82.7)	Chon Buri (672.7)

**Remarks:**

- The high percentages of orphans in the Northern provinces is largely the effect of AIDS. Data for Bangkok Vicinity is used as proxy for Bangkok.
- Violent crimes include murder, robbery, burglary, kidnapping, arson. Violent crimes reported increased from 13 to 16 during 2000 to 2005. The high percentages of violent crimes in the Southern provinces are due to the expansion of conflict in the past few years.

**Figure AI.6 Family and Community Life Index**



**Rank**

- 1 Nong Bua Lam Phu
- 2 Pathum Thani
- 3 Khon Kaen
- 4 Loei
- 5 Udon Thani
- 6 Surin
- 7 Roi Et
- 8 Buri Ram
- 9 Mukdahan
- 10 Si Sa Ket
- 11 Yasothon
- 12 Nonthaburi
- 13 Nong Khai
- 14 Sakon Nakhon
- 15 Sa Kaeo
- 16 Kalasin
- 17 Krabi
- 18 Nakhon Ratchasima
- 19 Songkhla
- 20 Maha Sarakham
- 21 Phetchabun
- 22 Ubon Ratchathani
- 23 Phrae
- 24 Satun
- 25 Nan
- 26 Chaiyaphum
- 27 Phang-nga
- 28 Chai Nat
- 29 Nakhon Sawan
- 30 Phuket
- 31 Nakhon Phanom
- 32 Samut Prakan
- 33 Chachoengsao
- 34 Lampang
- 35 Chanthaburi
- 36 Sing Buri
- 37 Phitsanulok
- 38 Trat
- 39 Nakhon Si Thammarat
- 40 Mae Hong Son
- 41 Ranong
- 42 Amnat Charoen
- 43 Chumphon
- 44 Uttaradit
- 45 Phetchaburi
- 46 Kamphaeng Phet
- 47 Kanchanaburi
- 48 Lamphun
- 49 Trang
- 50 Uthai Thani
- 51 Nakhon Nayok
- 52 Phra Nakhon Si Ayutthaya
- 53 Saraburi
- 54 Bangkok
- 55 Phichit
- 56 Samut Sakhon
- 57 Prachin Buri
- 58 Nakhon Pathom
- 59 Rayong
- 60 Surat Thani
- 61 Suphan Buri
- 62 Lop Buri
- 63 Prachuap Khiri Khan
- 64 Tak
- 65 Samut Songkhram
- 66 Phayao
- 67 Chiang Mai
- 68 Sukhothai
- 69 Pattani
- 70 Ratchaburi
- 71 Yala
- 72 Ang Thong
- 73 Phatthalung
- 74 Chon Buri
- 75 Chiang Rai
- 76 Narathiwat

## Transportation and Communication Index

Mobility and connectivity enhance people's potential and enrich their lives. The Transportation and Communication Index covers road condition, road length, vehicle registration, land traffic accidents, TV, mobile phone and internet.

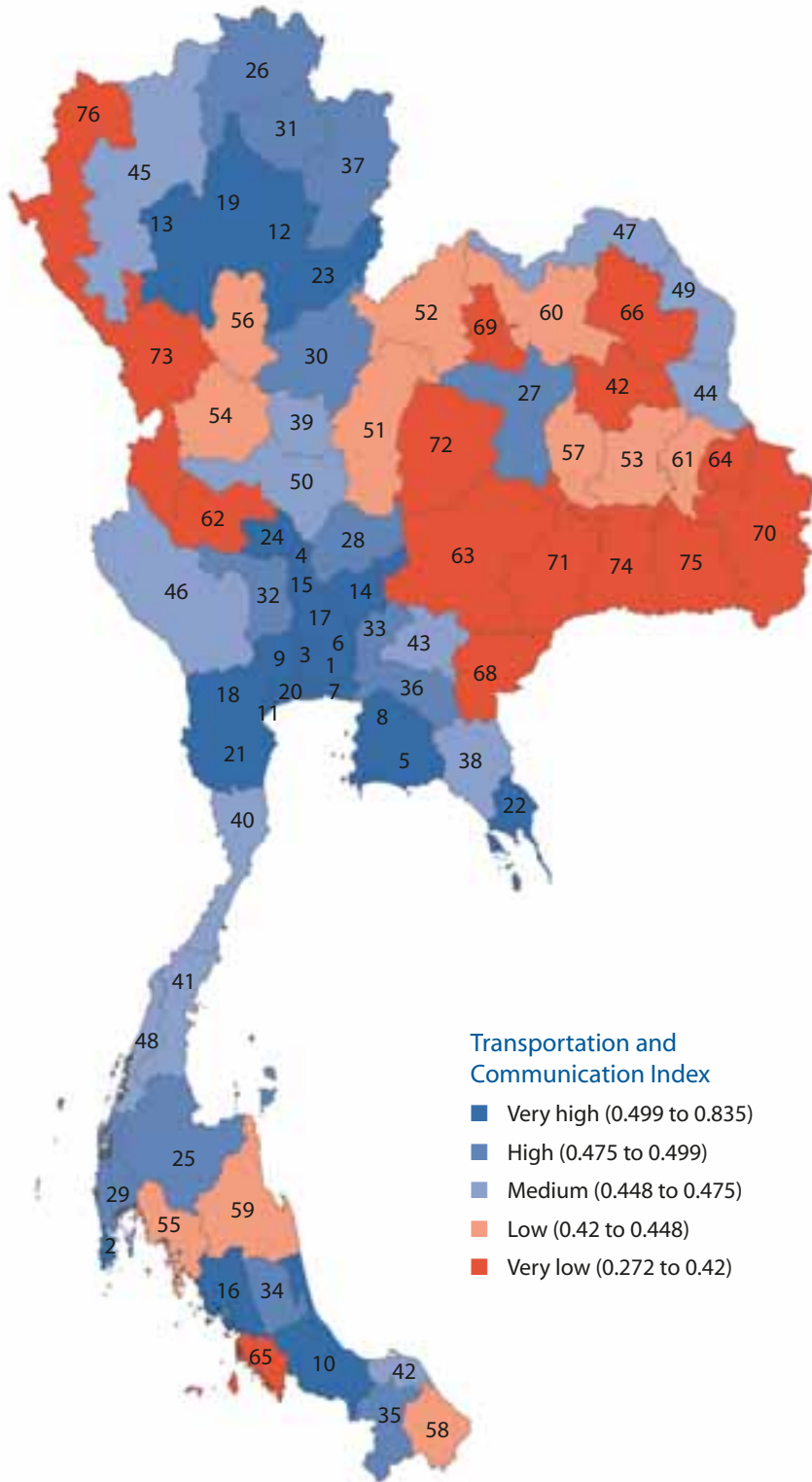
**Table AI.9 Five best and worst performers on transportation and communication indicators**

Villages with all-seasoned main roads (%)	Vehicle registration (per 1,000)	Length of road per province area (km)	Land traffic accidents (per 100,000)	Households having TV (%)	Population having mobile phone (%)	Population having internet access (%)
<b>Five best</b>						
Bangkok, Phuket (93.3)	Bangkok (1,079.3)	Bangkok (0.75)	Narathiwat (19.1)	Ayutthaya (98.5)	Nonthaburi (61.2)	Bangkok (25.9)
Samut Prakan (79.9)	Phuket (996.2)	Phuket (0.51)	Buri Ram (28.2)	Phang-nga (97.5)	Bangkok (59.2)	Nonthaburi (24.1)
Samut Sakon (78.2)	Rayong (640.9)	Nonthaburi (0.47)	Khon Kaen (36.3)	Amnat Charoen (97.4)	Samut Prakan (56.8)	Samut Prakan (20.7)
Nonthaburi (77.7)	Chon Buri (632.3)	Samut Songkhram (0.45)	Nong Bua Lam Phu (37.2)	Udon Thani (97.3)	Pathum Thani (56.2)	Phuket (20.0)
Pathum Thani (76.5)	Lamphun (571.4)	Sing Buri (0.44)	Mae Hong Son (39.9)	Maha Sarakham (97.2)	Phuket (55.4)	Phrae (18.2)
<b>Five worst</b>						
Nakhon Sawan (33.7)	Nong Bua Lam Phu (160.5)	Uthai Thani (0.12)	Satun (385.8)	Yala (82.3)	Buri Ram (23.5)	Sakon Nakhon, Nakhon Ratchasima (6.0)
Mae Hong Son (32.5)	Nonthaburi (152.9)	Phitsanulok (0.11)	Bangkok (394.9)	Narathiwat (82.0)	Yasothon (22.6)	Prachuap Khiri Khan (5.8)
Buri Ram (31.6)	Mae Hong Son (135.7)	Lampang, Mae Hong Son, Chaiyaphum (0.09)	Krabi (463.3)	Tak (77.5)	Narathiwat, Mukdahan (22.5)	Sa Kaeo (5.2)
Kamphaeng Phet (30.3)	Pathum Thani (116.1)	Tak, Kanchanaburi (0.08)	Samut Sakhon (545.7)	Pattani (75.0)	Si Sa Ket (21.0)	Phang-nga (4.5)
Surin (28.5)	Samut Prakan (75.8)	Chanthaburi (0.02)	Phuket (816.9)	Mae Hong Son (62.3)	Mae Hong Son (11.0)	Narathiwat (4.1)

**Remarks:**

- There are no data on "villages with all-seasoned main roads" for Bangkok. Phuket, which has the highest figure, is used as proxy for Bangkok.
- Vehicle registration is abnormally low in Bangkok vicinity because many people buy in Bangkok itself. The same is true of other provinces adjacent to large business centres.

**Figure AI.7 Transportation and Communication Index**



**Rank**

- 1 Bangkok
- 2 Phuket
- 3 Nonthaburi
- 4 Sing Buri
- 5 Rayong
- 6 Pathum Thani
- 7 Samut Prakan
- 8 Chon Buri
- 9 Nakhon Pathom
- 10 Songkhla
- 11 Samut Songkhram
- 12 Phrae
- 13 Lamphun
- 14 Saraburi
- 15 Ang Thong
- 16 Trang
- 17 Phra Nakhon Si Ayutthaya
- 18 Ratchaburi
- 19 Lampang
- 20 Samut Sakhon
- 21 Phetchaburi
- 22 Trat
- 23 Uttaradit
- 24 Chai Nat
- 25 Surat Thani
- 26 Chiang Rai
- 27 Khon Kaen
- 28 Lop Buri
- 29 Phang-nga
- 30 Phitsanulok
- 31 Phayao
- 32 Suphan Buri
- 33 Nakhon Nayok
- 34 Phatthalung
- 35 Yala
- 36 Chachoengsao
- 37 Nan
- 38 Chanthaburi
- 39 Phichit
- 40 Prachuap Khiri Khan
- 41 Chumphon
- 42 Pattani
- 43 Prachin Buri
- 44 Mukdahan
- 45 Chiang Mai
- 46 Kanchanaburi
- 47 Nong Khai
- 48 Ranong
- 49 Nakhon Phanom
- 50 Nakhon Sawan
- 51 Phetchabun
- 52 Loei
- 53 Roi Et
- 54 Kamphaeng Phet
- 55 Krabi
- 56 Sukhothai
- 57 Maha Sarakham
- 58 Narathiwat
- 59 Nakhon Si Thammarat
- 60 Udon Thani
- 61 Yasothon
- 62 Uthai Thani
- 63 Nakhon Ratchasima
- 64 Amnat Charoen
- 65 Satun
- 66 Sakon Nakhon
- 67 Kalasin
- 68 Sa Kaeo
- 69 Nong Bua Lam Phu
- 70 Ubon Ratchathani
- 71 Buri Ram
- 72 Chaiyaphum
- 73 Tak
- 74 Surin
- 75 Si Sa Ket
- 76 Mae Hong Son



## Participation

Political and social participation enriches people's lives and enhances community life. The Participation Index covers voter turnout, community groups, participation in local groups, participation in social services.

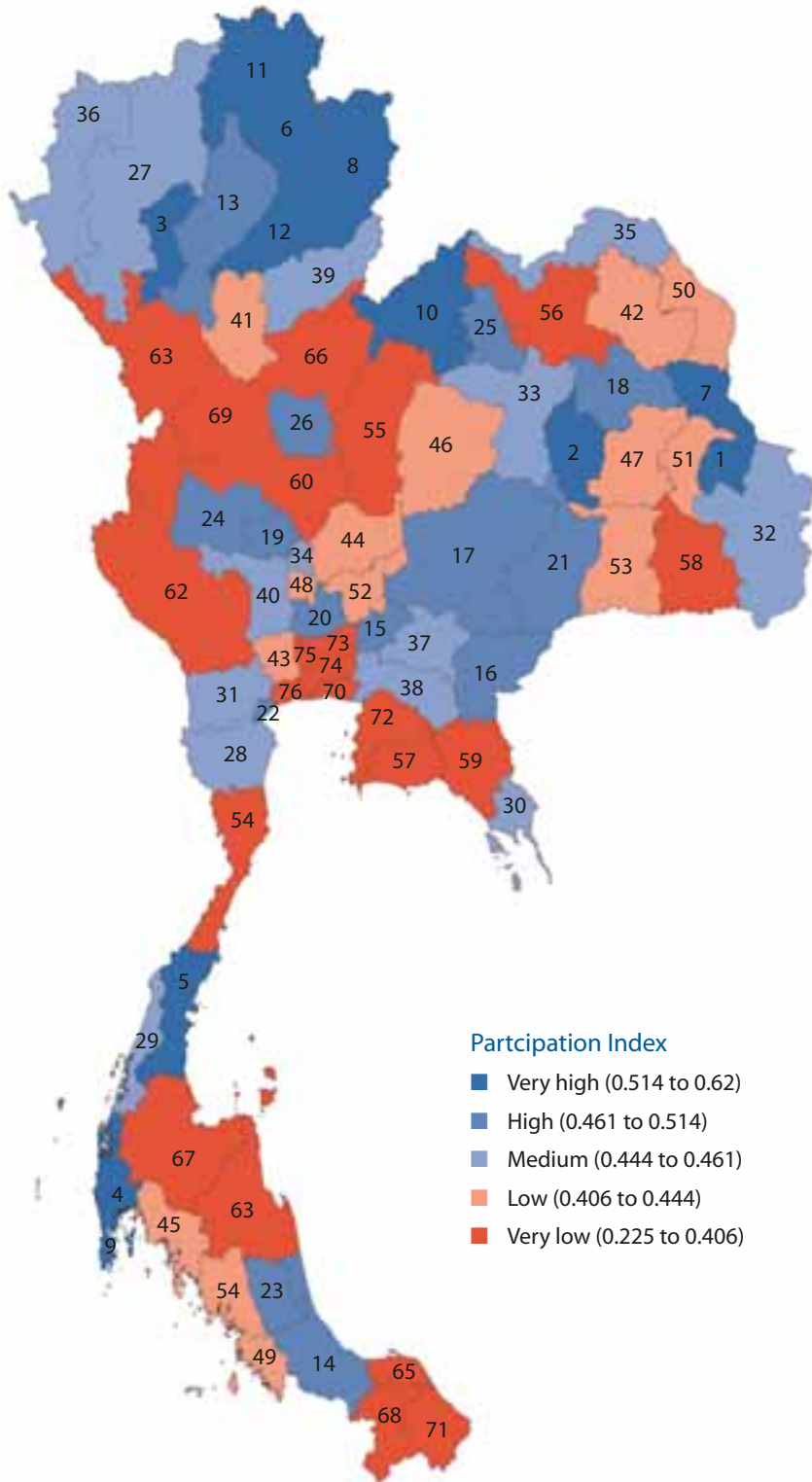
**Table AI.10 Five best and worst performers on participation indicators**

Vote turnout (%)	Community groups (per 100,000)	Households participating in local groups (%)	Participation in social services and unpaid services for other households (hours/day)
<b>Five best</b>			
Lamphun (86.6)	Amnat Charoen (427.6)	Yasothon (99.5)	Mae Hong Son, Phuket (3.2)
Satun (82.9)	Maha Sarakham (341.0)	Amnat Charoen, Roi Et (99.4)	Phayao (2.7)
Chiang Mai (82.7)	Mukdahan (277.5)	Maha Sarakham (99.1)	Lamphun (2.6)
Krabi (82.4)	Trat (245.1)	Ubon Ratchathani, Kalasin (98.8)	Ayutthaya (2.5)
Saraburi (81.0)	Phang-nga (232.8)	Si Sa Ket (98.7)	Chumphon, Nong Khai, Bangkok, Phang-nga, Sakon Nakhon, Nakhon Ratchasima (2.4)
<b>Five worst</b>			
Nakhon Phanom (63.9)	Pathum Thani (12.9)	Satun (81.9)	Si Sa Ket, Amnat Charoen, Ang Thong (1.3)
Sakhon Nakhon (63.4)	Samut Prakan (12.1)	Tak (81.8)	Trat, Surat Thani, Phitsanulok, Kanchanaburi (1.2)
Surin (62.9)	Ayutthaya (8.6)	Mae Hong Son (80.7)	Samut Prakan (1.1)
Nong Bua Lam Phu (62.6)	Chon Buri, Bangkok (7.8)	Pathum Thani (77.6)	Kamphaeng Phet (1.0)
Nong Khai (62.5)	Nonthaburi (4.0)	Bangkok, Samut Sakhon (73.6)	Nonthaburi, Pattani, Narathiwat (0.9)

Remarks:

- There are no data on households participating in local groups in Bangkok. Samut Sakhon, which has the lowest figure, is used as proxy for Bangkok.

**Figure AI.8 Participation Index**



**Rank**

- 1 Amnat Charoen
- 2 Maha Sarakham
- 3 Lamphun
- 4 Phang-nga
- 5 Chumphon
- 6 Phayao
- 7 Mukdahan
- 8 Nan
- 9 Phuket
- 10 Loei
- 11 Chiang Rai
- 12 Phrae
- 13 Lampang
- 14 Songkhla
- 15 Nakhon Nayok
- 16 Sa Kaeo
- 17 Nakhon Ratchasima
- 18 Kalasin
- 19 Chai Nat
- 20 Phra Nakhon Si Ayutthaya
- 21 Buri Ram
- 22 Samut Songkhram
- 23 Phatthalung
- 24 Uthai Thani
- 25 Nong Bua Lam Phu
- 26 Phichit
- 27 Chiang Mai
- 28 Phetchaburi
- 29 Ranong
- 30 Trat
- 31 Ratchaburi
- 32 Ubon Ratchathani
- 33 Khon Kaen
- 34 Sing Buri
- 35 Nong Khai
- 36 Mae Hong Son
- 37 Prachin Buri
- 38 Chachoengsao
- 39 Uttaradit
- 40 Suphan Buri
- 41 Sukhothai
- 42 Sakon Nakhon
- 43 Nakhon Pathom
- 44 Lop Buri
- 45 Krabi
- 46 Chaiyaphum
- 47 Roi Et
- 48 Ang Thong
- 49 Satun
- 50 Nakhon Phanom
- 51 Yasothorn
- 52 Saraburi
- 53 Surin
- 54 Trang
- 55 Phetchabun
- 56 Udon Thani
- 57 Rayong
- 58 Si Sa Ket
- 59 Chanthaburi
- 60 Nakhon Sawan
- 61 Nakhon Si Thammarat
- 62 Kanchanaburi
- 63 Tak
- 64 Prachuap Khiri Khan
- 65 Pattani
- 66 Phitsanulok
- 67 Surat Thani
- 68 Yala
- 69 Kamphaeng Phet
- 70 Samut Prakan
- 71 Narathiwat
- 72 Chon Buri
- 73 Pathum Thani
- 74 Bangkok
- 75 Nonthaburi
- 76 Samut Sakhon

Table AI.11 Provincial ranking by HAI indices

	Health	Education	Employment	Income	Housing and living environment	Family and community	Transportation and communication	Participation	HAI
1	Yala	Bangkok	Samut Prakan	Bangkok	Ang Thong	Nong Bua Lam Phu	Bangkok	Amnat Charoen	Phuket
2	Pathum Thani	Sing Buri	Ayutthaya	Nonthaburi	Sing Buri	Pathum Thani	Phuket	Maha Sarakham	Bangkok
3	Pattani	Nan	Samut Sakhon	Samut Sakhon	Lampang	Khon Kaen	Nonthaburi	Lamphun	Pathum Thani
4	Phang-nga	Phuket	Pathum Thani	Samut Prakan	Lamphun	Loei	Sing Buri	Phang-nga	Ayutthaya
5	Satun	Chon Buri	Bangkok	Phuket	Phetchaburi	Udon Thani	Rayong	Chumphon	Nonthaburi
6	Phetchaburi	Phayao	Rayong	Pathum Thani	Ayutthaya	Surin	Pathum Thani	Phayao	Songkhla
7	Phuket	Lop Buri	Chon Buri	Chon Buri	Prachin Buri	Roi Et	Samut Prakan	Mukdahan	Sing Buri
8	Chon Buri	Phrae	Phuket	Ayutthaya	Nakhon Nayok	Buri Ram	Chon Buri	Nan	Nakhon Pathom
9	Samut Sakhon	Lamphun	Prachin Buri	Songkhla	Uttaradit	Mukdahan	Nakhon Pathom	Phuket	Rayong
10	Nakhon Pathom	Rayong	Lamphun	Samut Songkhram	Lop Buri	Si Sa Ket	Songkhla	Loei	Samut Prakan
11	Trat	Songkhla	Yasothon	Phang-nga	Trang	Yasothon	Samut Songkhram	Chiang Rai	Samut Songkhram
12	Chumphon	Uttaradit	Mae Hong Son	Nakhon Pathom	Phayao	Nonthaburi	Phrae	Phrae	Phetchaburi
13	Narathiwat	Saraburi	Loei	Surat Thani	Nakhon Ratchasima	Nong Khai	Lamphun	Lampang	Chon Buri
14	Samut Songkhram	Chiang Mai	Kalasin	Chachoeng-sao	Phang-nga	Sakon Nakhon	Saraburi	Songkhla	Lamphun
15	Songkhla	Chai Nat	Nonthaburi	Saraburi	Phatthalung	Sa Kaeo	Ang Thong	Nakhon Nayok	Chumphon
16	Prachuap Khiri Khan	Phetchaburi	Ranong	Ang Thong	Rayong	Kalasin	Trang	Sa Kaeo	Phang-nga
17	Nonthaburi	Nakhon Nayok	Chaiyaphum	Yala	Nakhon Pathom	Krabi	Ayutthaya	Nakhon Ratchasima	Prachin Buri
18	Bangkok	Nakhon Si Thammarat	Nakhon Pathom	Chanthaburi	Suphan Buri	Nakhon Ratchasima	Ratchaburi	Kalasin	Phrae
19	Chachoeng-sao	Nonthaburi	Phayao	Ratchaburi	Yala	Songkhla	Lampang	Chai Nat	Trat
20	Nakhon Si Thammarat	Ayutthaya	Nan	Satun	Samut Songkhram	Maha Sarakham	Samut Sakhon	Ayutthaya	Satun
21	Rayong	Ang Thong	Prachuap Khiri Khan	Trang	Nan	Phetchabun	Phetchaburi	Buri Ram	Saraburi
22	Ayutthaya	Phatthalung	Saraburi	Phetchaburi	Prachuap Khiri Khan	Ubon Ratchathani	Trat	Samut Songkhram	Ang Thong
23	Trang	Samut Prakan	Maha Sarakham	Prachuap Khiri Khan	Kanchanaburi	Phrae	Uttaradit	Phatthalung	Nakhon Nayok
24	Sing Buri	Pathum Thani	Ubon Ratchathani	Rayong	Phrae	Satun	Chai Nat	Uthai Thani	Samut Sakhon

Table AI.11 Provincial ranking by HAI indices (continued)

	Health	Education	Employment	Income	Housing and living environment	Family and community	Transportation and communication	Participation	HAI
25	Krabi	Prachin Buri	Surat Thani	Trat	Narathiwat	Nan	Surat Thani	Nong Bua Lam Phu	Trang
26	Prachin Buri	Phitsanulok	Nakhon Nayok	Sing Buri	Pattani	Chaiyaphum	Chiang Rai	Phichit	Nan
27	Chanthaburi	Khon Kaen	Roi Et	Suphan Buri	Chiang Rai	Phang-nga	Khon Kaen	Chiang Mai	Phayao
28	Samut Prakan	Lampang	Nong Bua Lam Phu	Kanchanaburi	Chanthaburi	Chai Nat	Lop Buri	Phetchaburi	Lampang
29	Kanchana buri	Chiang Rai	Uthai Thani	Chumphon	Loei	Nakhon Sawan	Phang-nga	Ranong	Chachoeng sao
30	Suphan Buri	Mukdahan	Chumphon	Phatthalung	Chai Nat	Phuket	Phitsanulok	Trat	Chanthaburi
31	Surat Thani	Surat Thani	Udon Thani	Prachin Buri	Ratchaburi	Nakhon Phanom	Phayao	Ratchaburi	Prachuap Khiri Khan
32	Ranong	Sukhothai	Buri Ram	Ranong	Nakhon Si Thammarat	Samut Prakan	Suphan Buri	Ubon Ratchathani	Maha Sarakham
33	Uthai Thani	Satun	Chanthaburi	Phrae	Satun	Chachoeng sao	Nakhon Nayok	Khon Kaen	Uttaradit
34	Nakhon Nayok	Trat	Nakhon Phanom	Phitsanulok	Songkhla	Lampang	Phatthalung	Sing Buri	Loei
35	Sa Kaeo	Yala	Samut Songkhram	Krabi	Pathum Thani	Chanthaburi	Yala	Nong Khai	Surat Thani
36	Phatthalung	Nakhon Pathom	Ratchaburi	Chai Nat	Phitsanulok	Sing Buri	Chachoeng-sao	Mae Hong Son	Yala
37	Nakhon Sawan	Uthai Thani	Phrae	Ubon Ratchathani	Phichit	Phitsanulok	Nan	Prachin Buri	Ratchaburi
38	Udon Thani	Yasothon	Nakhon Ratchasima	Lamphun	Surat Thani	Trat	Chanthaburi	Chachoeng-sao	Phatthalung
39	Ang Thong	Prachuap Khiri Khan	Phitsanulok	Lampang	Nakhon Sawan	Nakhon Si Thammarat	Phichit	Uttaradit	Chai Nat
40	Lop Buri	Chachoeng-sao	Chiang Rai	Uttaradit	Buri Ram	Mae Hong Son	Prachuap Khiri Khan	Suphan Buri	Lop Buri
41	Saraburi	Kalasin	Nong Khai	Nakhon Si Thammarat	Uthai Thani	Ranong	Chumphon	Sukhothai	Suphan Buri
42	Ratchaburi	Chumphon	Sakon Nakhon	Kamphaeng Phet	Sa Kaeo	Amnat Charoen	Pattani	Sakon Nakhon	Nakhon Ratchasima
43	Nakhon Ratchasima	Samut Songkhram	Tak	Nong Khai	Saraburi	Chumphon	Prachin Buri	Nakhon Pathom	Kanchana buri
44	Maha Sarakham	Phang-nga	Phatthalung	Nakhon Nayok	Chumphon	Uttaradit	Mukdahan	Lop Buri	Udon Thani
45	Nong Khai	Loei	Narathiwat	Khon Kaen	Chon Buri	Phetchaburi	Chiang Mai	Krabi	Krabi
46	Ubon Ratchathani	Ranong	Sukhothai	Udon Thani	Phetchabun	Kamphaeng Phet	Kanchanaburi	Chaiyaphum	Nakhon Si Thammarat
47	Amnat Charoen	Chanthaburi	Uttaradit	Phichit	Phuket	Kanchanaburi	Nong Khai	Roi Et	Khon Kaen
48	Phichit	Ratchaburi	Nakhon Sawan	Chiang Rai	Yasothon	Lamphun	Ranong	Ang Thong	Yasothon

Table AI.11 Provincial ranking by HAI indices (continued)

	Health	Education	Employment	Income	Housing and living environment	Family and community	Transportation and communication	Participation	HAI
49	Phayao	Mae Hong Son	Mukdahan	Lop Buri	Maha Sarakham	Trang	Nakhon Phanom	Satun	Phitsanulok
50	Uttaradit	Trang	Lampang	Nakhon Sawan	Nonthaburi	Uthai Thani	Nakhon Sawan	Nakhon Phanom	Sa Kaeo
51	Sukhothai	Maha Sarakham	Lop Buri	Phayao	Roi Et	Nakhon Nayok	Phetchabun	Yasothon	Amnat Charoen
52	Phitsanulok	Udon Thani	Trang	Sukhothai	Sukhothai	Ayutthaya	Loei	Saraburi	Kalasin
53	Phetchabun	Krabi	Chiang Mai	Chiang Mai	Chaiyaphum	Saraburi	Roi Et	Surin	Mukdahan
54	Loei	Roi Et	Surin	Sa Kaeo	Trat	Bangkok	Kamphaeng Phet	Trang	Ranong
55	Yasothon	Nakhon Sawan	Satun	Pattani	Amnat Charoen	Phichit	Krabi	Phetchabun	Nakhon Sawan
56	Surin	Amnat Charoen	Kanchanaburi	Narathiwat	Khon Kaen	Samut Sakhon	Sukhothai	Udon Thani	Roi Et
57	Sakon Nakhon	Phichit	Sa Kaeo	Phetchabun	Kalasin	Prachin Buri	Maha Sarakham	Rayong	Nong Khai
58	Chai Nat	Kanchanaburi	Songkhla	Kalasin	Udon Thani	Nakhon Pathom	Narathiwat	Si Sa Ket	Ubon Ratchathani
59	Roi Et	Pattani	Ang Thong	Nakhon Ratchasima	Nong Bua Lam Phu	Rayong	Nakhon Si Thammarat	Chanthaburi	Phichit
60	Nakhon Phanom	Sakon Nakhon	Si Sa Ket	Roi Et	Si Sa Ket	Surat Thani	Udon Thani	Nakhon Sawan	Uthai Thani
61	Nong Bua Lam Phu	Suphan Buri	Trat	Maha Sarakham	Sakon Nakhon	Suphan Buri	Yasothon	Nakhon Si Thammarat	Pattani
62	Nan	Tak	Phetchaburi	Tak	Krabi	Lop Buri	Uthai Thani	Kanchanaburi	Sukhothai
63	Mae Hong Son	Nakhon Ratchasima	Phichit	Yasothon	Chachoengsao	Prachuap Khiri Khan	Nakhon Ratchasima	Tak	Chiang Mai
64	Buri Ram	Si Sa Ket	Khon Kaen	Amnat Charoen	Chiang Mai	Tak	Amnat Charoen	Prachuap Khiri Khan	Sakon Nakhon
65	Chiang Mai	Surin	Pattani	Nan	Ubon Ratchathani	Samut Songkhram	Satun	Pattani	Chiang Rai
66	Lampang	Nong Khai	Amnat Charoen	Loei	Kamphaeng Phet	Phayao	Sakon Nakhon	Phitsanulok	Buri Ram
67	Kalasin	Samut Sakhon	Phetchabun	Sakon Nakhon	Nakhon Phanom	Chiang Mai	Kalasin	Surat Thani	Nong Bua Lam Phu
68	Tak	Kamphaeng Phet	Chachoengsao	Mukdahan	Mukdahan	Sukhothai	Sa Kaeo	Yala	Phetchabun
69	Phrae	Nakhon Phanom	Yala	Uthai Thani	Bangkok	Pattani	Nong Bua Lam Phu	Kamphaeng Phet	Nakhon Phanom
70	Mukdahan	Ubon Ratchathani	Suphan Buri	Chaiyaphum	Nong Khai	Ratchaburi	Ubon Ratchathani	Samut Prakan	Chaiyaphum
71	Si Sa Ket	Buri Ram	Krabi	Si Sa Ket	Samut Prakan	Yala	Buri Ram	Narathiwat	Narathiwat
72	Kamphaeng Phet	Sa Kaeo	Nakhon Si Thammarat	Buri Ram	Samut Sakhon	Ang Thong	Chaiyaphum	Chon Buri	Si Sa Ket

**Table AI.11 Provincial ranking by HAI indices** (continued)

	Health	Education	Employment	Income	Housing and living environment	Family and community	Transportation and communication	Participation	HAI
73	Chaiyaphum	Nong Bua Lam Phu	Sing Buri	Nakhon Phanom	Surin	Phatthalung	Tak	Pathum Thani	Kamphaeng Phet
74	Khon Kaen	Chaiyaphum	Chai Nat	Mae Hong Son	Tak	Chon Buri	Surin	Bangkok	Surin
75	Lamphun	Narathiwat	Kamphaeng Phet	Nong Bua Lam Phu	Ranong	Chiang Rai	Si Sa Ket	Nonthaburi	Tak
76	Chiang Rai	Phetchabun	Phang-nga	Surin	Mae Hong Son	Narathiwat	Mae Hong Son	Samut Sakhon	Mae Hong Son

# ANNEX



## Indices Data

- Table AII.0 Basic data
- Table AII.1 Health
- Table AII.2 Education
- Table AII.3 Employment
- Table AII.4 Income
- Table AII.5 Housing and living environment
- Table AII.6 Family and community life
- Table AII.7 Transport and communication
- Table AII.8 Participation

Table AII.0 Basic Data

Location	Population 2005			Households 2004		Gross Provincial Product (GPP) 2004p		Total land area 2004	Forest area 2004	Farm hold land 2003	Unclassified land 2004	Population density 2004
	Total	Male	Female	Total	Average household size	Total	Per capita					
	(number)	(number)	(number)	(number)	(persons)	(mil.Baht /year)	(Baht /year)					
	1	2	3	4	5	6	7					
<b>Kingdom</b>	<b>62,418,054</b>	<b>30,818,629</b>	<b>31,599,425</b>	<b>16,765,049</b>	<b>3.4</b>	<b>6,503,488</b>	<b>101,304</b>	<b>513,115</b>	<b>167,591</b>	<b>180,297</b>	<b>165,227</b>	<b>122</b>
<b>Bangkok</b>	<b>5,658,953</b>	<b>2,705,954</b>	<b>2,952,999</b>	<b>2,077,607</b>	<b>3.2</b>	<b>1,908,140</b>	<b>283,780</b>	<b>1,565</b>	<b>3</b>	<b>169</b>	<b>1,393</b>	<b>3,615</b>
<b>Bangkok Vicinity</b>	<b>4,126,183</b>	<b>1,988,482</b>	<b>2,137,701</b>	<b>1,002,445</b>	<b>3.3</b>	<b>2,895,287</b>	<b>259,871</b>	<b>6,193</b>	<b>40</b>	<b>2,422</b>	<b>3,731</b>	<b>666</b>
Nakhon Pathom	808,961	391,585	417,376	228,065	3.4	111,665	121,381	2,168	-	989	1,179	373
Nonthaburi	972,280	462,010	510,270	222,449	3.3	83,749	77,298	622	-	262	360	1,562
Pathum Thani	815,402	391,909	423,493	174,254	3.5	149,211	206,660	1,526	-	702	824	534
Samut Prakan	1,077,523	523,247	554,276	252,464	3.1	416,732	350,252	1,004	6	260	737	1,073
Samut Sakhon	452,017	219,731	232,286	125,213	3.1	225,790	449,780	872	33	208	631	518
<b>Central Region</b>	<b>2,942,459</b>	<b>1,443,615</b>	<b>1,498,844</b>	<b>812,295</b>	<b>3.4</b>	<b>477,236</b>	<b>157,348</b>	<b>16,593</b>	<b>1,534</b>	<b>8,993</b>	<b>6,067</b>	<b>177</b>
Chai Nat	340,129	164,703	175,426	111,271	3.2	19,354	53,602	2,470	59	1,528	883	138
Phra Nakhon Si Ayutthaya	746,919	361,947	384,972	195,740	3.3	264,679	360,649	2,557	2	1,476	1,079	292
Lop Buri	751,951	377,436	374,515	201,160	3.6	60,578	80,476	6,200	731	3,454	2,014	121
Saraburi	601,938	298,423	303,515	158,835	3.6	99,890	150,901	3,576	743	1,375	1,458	168
Sing Buri	217,744	104,407	113,337	68,752	3.3	16,364	67,839	822	-	552	271	265
Ang Thong	283,778	136,699	147,079	76,537	3.4	16,371	58,029	968	-	607	361	293
<b>Eastern Region</b>	<b>4,333,848</b>	<b>2,147,452</b>	<b>2,186,396</b>	<b>1,103,915</b>	<b>3.4</b>	<b>968,311</b>	<b>222,982</b>	<b>36,503</b>	<b>8,240</b>	<b>13,005</b>	<b>15,257</b>	<b>119</b>
Chanthaburi	498,159	246,468	251,691	130,871	3.3	26,930	51,989	6,338	2,119	2,201	2,018	79
Chachoengsao	647,610	318,037	329,573	170,043	3.5	160,511	245,418	5,351	858	2,069	2,424	121
Chon Buri	1,172,432	577,878	594,554	276,784	3.2	300,829	276,576	4,363	483	1,402	2,478	269
Trat	219,135	110,281	108,854	59,610	3.3	16,639	68,998	2,819	965	834	1,020	78
Nakhon Nayok	250,779	123,954	126,825	73,779	3.5	14,691	61,402	2,122	643	840	639	118
Prachin Buri	449,621	223,148	226,473	114,266	3.7	62,164	147,617	4,762	1,484	1,466	1,812	94
Rayong	559,135	276,918	282,217	136,701	3.3	364,026	691,093	3,552	313	1,191	2,048	157
Sa Kaeo	536,977	270,768	266,209	141,862	3.4	22,521	34,406	7,195	1,376	3,003	2,816	75
<b>Western Region</b>	<b>3,628,123</b>	<b>1,788,403</b>	<b>1,839,720</b>	<b>926,569</b>	<b>3.5</b>	<b>271,813</b>	<b>75,615</b>	<b>43,047</b>	<b>19,666</b>	<b>9,959</b>	<b>13,422</b>	<b>84</b>
Ratchaburi	823,494	403,218	420,276	213,731	3.3	87,737	104,296	5,196	1,607	1,536	2,053	158
Kanchanaburi	826,169	416,492	409,677	186,486	3.7	50,993	62,249	19,483	11,630	3,049	4,804	42
Suphan Buri	842,613	409,345	433,268	237,570	3.5	42,907	50,864	5,358	605	3,006	1,748	157
Samut Songkhram	195,068	93,893	101,175	54,701	3.3	11,500	61,331	417	13	126	278	468
Phetchaburi	453,982	219,885	234,097	116,691	3.4	39,114	88,836	6,225	3,313	829	2,084	73
Prachuap Khiri Khan	486,797	245,570	241,227	117,390	3.4	39,561	85,467	6,368	2,499	1,414	2,455	76
<b>Northeastern Region</b>	<b>21,328,111</b>	<b>10,649,346</b>	<b>10,680,765</b>	<b>5,349,918</b>	<b>3.7</b>	<b>682,274</b>	<b>31,351</b>	<b>168,854</b>	<b>28,096</b>	<b>81,834</b>	<b>58,925</b>	<b>126</b>
Nakhon Ratchasima	2,546,763	1,261,666	1,285,097	697,162	3.7	118,142	44,409	20,494	3,149	10,184	7,161	124
Buri Ram	1,531,430	764,457	766,973	356,755	3.7	39,689	25,150	10,322	952	5,438	3,932	148
Surin	1,374,700	687,063	687,637	353,599	3.6	33,735	22,832	8,124	845	5,317	1,962	169
Si Sa Ket	1,443,975	721,229	722,746	362,370	3.6	34,356	22,917	8,840	1,032	5,130	2,678	163
Ubon Ratchathani	1,774,808	889,792	885,016	418,234	3.8	52,774	30,482	15,745	2,712	7,036	5,997	113
Yasothon	541,264	271,538	269,726	145,021	3.7	14,906	27,456	4,162	456	2,334	1,372	130
Chaiyaphum	1,116,934	556,309	560,625	293,306	3.6	30,727	27,851	12,778	3,745	4,622	4,412	87
Amnat Charoen	368,791	184,751	184,040	90,207	3.8	8,581	17,253	3,161	574	1,701	886	117
Nong Bua Lam Phu	496,657	250,019	246,638	115,219	3.8	11,039	17,083	3,859	567	2,067	1,226	129
Khon Kaen	1,747,542	868,007	879,535	462,472	3.5	92,081	55,210	10,886	1,231	5,527	4,128	161
Udon Thani	1,523,802	763,130	760,672	358,556	3.8	50,542	34,335	11,730	1,476	5,788	4,466	130
Loei	612,422	310,141	302,281	159,985	3.7	21,682	33,749	11,425	4,280	3,356	3,789	54
Nong Khai	896,099	450,661	445,438	221,414	3.7	26,295	26,653	7,332	666	3,582	3,084	122
Maha Sarakham	936,883	464,600	472,283	249,351	3.8	25,575	28,587	5,292	222	3,674	1,396	177
Roi Et	1,310,672	654,589	656,083	324,358	3.7	36,082	26,565	8,299	532	5,126	2,642	158
Kalasin	973,556	485,384	488,172	239,707	3.5	28,050	28,706	6,947	830	3,296	2,820	140
Sakon Nakhon	1,104,106	551,233	552,873	255,174	3.8	29,557	27,667	9,606	2,048	3,994	3,563	115
Nakhon Phanom	693,594	345,434	348,160	171,679	3.7	18,674	31,050	5,513	1,322	2,390	1,801	126
Mukdahan	334,113	167,343	166,770	75,350	3.6	9,787	27,343	4,340	1,457	1,273	1,610	77
<b>Northern Region</b>	<b>11,883,517</b>	<b>5,878,674</b>	<b>6,004,843</b>	<b>3,302,673</b>	<b>3.2</b>	<b>560,677</b>	<b>48,110</b>	<b>169,644</b>	<b>92,068</b>	<b>40,033</b>	<b>37,543</b>	<b>70</b>
Chiang Mai	1,650,009	811,990	838,019	450,755	3.1	93,540	58,962	20,107	15,691	2,166	2,250	82
Lamphun	404,727	197,546	207,181	124,616	3.0	47,263	124,190	4,506	2,606	744	1,156	90
Lampang	776,726	383,952	392,774	227,934	3.1	37,358	47,318	12,534	8,601	1,158	2,776	62
Uttaradit	469,387	231,693	237,694	132,117	3.2	20,047	43,430	7,839	4,443	1,495	1,901	60
Phrae	471,447	230,754	240,693	155,035	3.2	17,514	38,833	6,539	4,264	910	1,365	72
Nan	478,080	241,276	236,804	131,463	3.0	15,490	33,105	11,472	8,497	1,344	1,631	42
Phayao	486,889	240,203	246,686	146,925	3.0	16,935	33,394	6,335	3,189	1,502	1,644	77
Chiang Rai	1,225,058	606,689	618,369	336,442	3.1	41,856	32,925	11,678	5,101	3,463	3,114	105
Mae Hong Son	253,609	130,985	122,624	56,078	3.3	7,462	30,790	12,681	11,128	403	1,150	20
Nakhon Sawan	1,077,808	528,683	549,125	313,185	3.0	52,596	52,167	9,598	848	5,700	3,049	112
Uthai Thani	326,731	160,943	165,788	91,370	3.4	13,015	42,812	6,730	3,322	1,962	1,445	49
Kamphaeng Phet	728,265	362,233	366,032	198,059	3.5	51,754	65,492	8,607	1,971	3,817	2,819	85
Tak	522,197	266,262	255,935	124,503	3.4	22,358	46,048	16,407	12,670	1,496	2,241	32
Sukhothai	610,361	297,634	312,727	172,714	3.1	22,088	37,134	6,596	2,133	2,679	1,783	93
Phitsanulok	840,970	415,305	425,665	229,132	3.1	40,146	50,653	10,816	3,940	3,478	3,398	78
Phichit	558,794	273,498	285,296	156,264	3.2	22,058	45,329	4,531	13	3,090	1,428	123
Phetchabun	1,002,459	499,028	503,431	256,082	3.4	39,198	37,899	12,668	3,651	4,625	4,392	79
<b>Southern Region</b>	<b>8,516,860</b>	<b>4,218,703</b>	<b>4,298,157</b>	<b>2,189,627</b>	<b>3.7</b>	<b>647,890</b>	<b>74,734</b>	<b>70,715</b>	<b>17,943</b>	<b>23,882</b>	<b>28,890</b>	<b>120</b>
Nakhon Si Thammarat	1,504,420	747,639	756,781	437,325	3.8	98,499	60,999	9,943	1,881	4,059	4,003	151
Krabi	395,665	198,713	196,952	86,707	3.6	33,178	85,056	4,709	882	1,817	2,010	84
Phang-nga	241,442	121,199	120,243	71,978	3.5	21,735	92,106	4,171	1,723	1,077	1,371	58
Phuket	292,245	140,703	151,542	59,092	3.4	54,845	192,588	543	99	101	343	538
Surat Thani	947,349	470,126	477,223	236,682								



Table AII.1 Health

Location	Population mid-year 2005	Under weight births 2005	Crude death 2005	Infant mortality 2005	Maternal mortality 2005	Sexually transmitted diseases 2004		AIDS Patients 1984–2004	New AIDS patients Jan–July 2004		Population with physical illness 2005			Mental illness 2005
		% of total births	per 1,000 pop	per 1,000 live births	per 100,000 live births	Patients with STD	STD per 100,000 pop	Total	Total	per 100,000 pop	Male	Female	Total	per 1,000 pop
	(number)	(%)	(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>62,195,839</b>	<b>9.3</b>	<b>6.4</b>	<b>7.6</b>	<b>na</b>	<b>13,132</b>	<b>0.21</b>	<b>242,576</b>	<b>2,088</b>	<b>3.3</b>	<b>17.7</b>	<b>21.7</b>	<b>19.7</b>	<b>18</b>
<b>Bangkok</b>	<b>5,646,542</b>	<b>9.5</b>	<b>6.8</b>	<b>7.9</b>	<b>8.8</b>	<b>4,545</b>	<b>0.79</b>	<b>26,147</b>	<b>392</b>	<b>6.8</b>	<b>12.2</b>	<b>12.9</b>	<b>12.6</b>	<b>33</b>
<b>Bangkok Vicinity</b>	<b>4,064,295</b>	<b>9.2</b>	<b>6.4</b>	<b>7.1</b>	<b>na</b>	<b>509</b>	<b>0.13</b>	<b>17,884</b>	<b>180</b>	<b>4.5</b>	<b>9.9</b>	<b>13.9</b>	<b>12.0</b>	<b>23</b>
Nakhon Pathom	803,489	9.7	6.9	6.1	35.6	88	0.11	4,098	5	0.6	11.2	13.7	12.4	12
Nonthaburi	957,285	9.3	6.2	7.9	na	0	0.00	3,950	2	0.2	11.4	16.1	13.8	52
Pathum Thani	792,700	9.6	6.3	5.1	8.2	13	0.02	3,680	0	0.0	9.0	11.5	10.2	6
Samut Prakan	1,063,469	8.7	5.9	9.1	na	332	0.32	3,973	134	12.8	10.4	14.9	12.6	22
Samut Sakhon	447,352	9.3	7.6	6.4	na	76	0.17	2,183	39	8.8	5.8	11.2	8.6	7
<b>Central Region</b>	<b>2,936,393</b>	<b>8.9</b>	<b>7.9</b>	<b>7.2</b>	<b>na</b>	<b>367</b>	<b>0.12</b>	<b>10,063</b>	<b>229</b>	<b>7.7</b>	<b>17.4</b>	<b>21.4</b>	<b>19.5</b>	<b>34</b>
Chai Nat	340,810	8.8	8.0	10.4	35.8	0	0.00	708	0	0.0	33.0	39.4	36.1	26
Phra Nakhon Si Ayutthaya	743,658	8.2	8.0	8.0	10.1	313	0.42	3,337	102	13.7	9.8	12.4	11.1	29
Lop Buri	750,718	9.2	6.9	5.1	12.3	0	0.00	2,140	82	10.8	20.3	20.9	20.6	33
Saraburi	598,903	9.5	8.3	7.9	22.6	0	0.00	2,209	0	0.0	13.8	19.2	16.6	52
Sing Buri	218,932	8.7	9.4	3.6	na	44	0.20	834	18	8.1	18.2	30.0	24.4	17
Ang Thong	283,372	8.9	8.7	8.7	na	10	0.03	835	27	9.4	17.4	25.6	21.6	33
<b>Eastern Region</b>	<b>4,303,424</b>	<b>9.1</b>	<b>6.9</b>	<b>6.5</b>	<b>na</b>	<b>527</b>	<b>0.12</b>	<b>23,324</b>	<b>261</b>	<b>6.1</b>	<b>13.7</b>	<b>15.9</b>	<b>14.8</b>	<b>13</b>
Chanthaburi	496,080	9.9	7.7	6.9	na	24	0.05	4,015	0	0.0	18.6	22.5	20.5	17
Chachoengsao	645,521	9.3	6.8	7.4	na	15	0.02	2,242	81	12.5	13.3	17.4	15.3	8
Chon Buri	1,157,709	9.2	7.6	5.7	3.8	443	0.39	4,664	0	0.0	11.0	11.3	11.1	14
Trat	218,543	7.4	5.7	4.5	na	19	0.09	1,997	0	0.0	11.2	17.7	14.6	15
Nakhon Nayok	249,685	8.6	7.5	7.1	na	0	0.00	1,103	43	17.2	20.8	31.1	25.9	20
Prachin Buri	447,783	9.0	6.8	7.6	na	26	0.06	1,063	20	4.4	15.0	17.1	16.0	9
Rayong	551,512	9.3	7.2	7.2	10.3	0	0.00	7,023	87	15.8	11.6	10.8	11.2	11
Sa Kaeo	536,591	8.6	4.7	6.9	na	0	0.00	1,217	30	5.6	16.7	19.4	18.1	12
<b>Western Region</b>	<b>3,609,730</b>	<b>8.8</b>	<b>6.7</b>	<b>6.5</b>	<b>na</b>	<b>447</b>	<b>0.12</b>	<b>17,718</b>	<b>213</b>	<b>5.9</b>	<b>19.6</b>	<b>21.5</b>	<b>20.5</b>	<b>16</b>
Ratchaburi	819,286	8.7	7.2	6.9	8.8	124	0.15	4,064	151	18.3	22.5	23.5	23.0	30
Kanchanaburi	818,217	9.4	5.3	5.3	37.0	112	0.14	3,424	23	2.9	19.9	23.1	21.5	12
Suphan Buri	841,334	9.1	7.8	7.2	10.9	78	0.09	3,103	13	1.5	24.3	28.5	26.5	12
Samut Songkhram	195,144	7.7	7.2	5.8	na	24	0.12	1,164	2	1.0	17.4	20.4	19.0	17
Phetchaburi	452,506	8.6	6.9	7.7	18.8	72	0.16	3,473	17	3.7	9.9	9.5	9.7	6
Prachuap Khiri Khan	483,243	8.3	5.8	5.9	16.3	37	0.08	2,490	7	1.4	15.7	15.4	15.6	10
<b>Northeastern Region</b>	<b>21,297,769</b>	<b>8.8</b>	<b>6.5</b>	<b>8.0</b>	<b>na</b>	<b>2,598</b>	<b>0.12</b>	<b>41,436</b>	<b>189</b>	<b>0.9</b>	<b>19.3</b>	<b>24.9</b>	<b>22.1</b>	<b>21</b>
Nakhon Ratchasima	2,543,053	8.3	5.9	7.0	7.0	248	0.10	3,508	76	3.0	16.7	21.0	18.8	19
Buri Ram	1,527,845	8.6	5.1	5.6	0.0	25	0.02	3,113	0	0.0	20.2	28.5	24.2	9
Surin	1,373,064	9.8	5.0	5.0	6.6	0	0.00	2,839	14	1.0	17.6	17.4	17.5	28
Si Sa Ket	1,442,190	9.9	5.2	7.3	6.9	24	0.02	2,453	54	3.7	17.0	24.3	20.4	20
Ubon Ratchathani	1,768,935	10.4	5.9	11.3	13.6	83	0.05	3,427	3	0.2	14.1	15.6	14.9	24
Yasothon	541,292	9.1	6.1	6.7	19.6	1	0.00	1,165	1	0.2	19.6	29.0	24.0	14
Chaiyaphum	1,117,026	8.4	5.5	6.2	9.4	0	0.00	2,024	0	0.0	15.8	20.5	18.1	46
Ammat Charoen	368,153	8.9	4.9	4.1	na	0	0.00	720	0	0.0	19.9	30.0	24.5	16
Nong Bua Lam Phu	495,625	8.6	5.0	6.4	na	3	0.01	774	0	0.0	16.1	29.6	22.9	31
Khon Kaen	1,744,646	8.5	6.7	13.8	10.0	1,191	0.68	4,595	10	0.6	36.1	47.0	41.8	45
Udon Thani	1,521,152	8.2	5.5	7.0	22.8	850	0.56	3,928	2	0.1	20.2	25.3	22.6	9
Loei	611,446	9.1	5.8	7.3	na	55	0.09	1,646	0	0.0	10.5	12.8	11.6	34
Nong Khai	895,911	7.7	5.3	7.1	19.6	2	0.00	1,304	9	1.0	13.4	19.2	16.3	6
Maha Sarakham	935,967	6.8	5.9	4.6	na	31	0.03	1,860	0	0.0	13.5	20.3	17.0	7
Roi Et	1,310,461	7.3	6.0	12.8	8.5	0	0.00	3,022	0	0.0	29.4	32.5	31.0	2
Kalasin	972,425	8.8	5.8	10.3	10.4	1	0.00	1,698	20	2.0	26.8	33.1	29.9	14
Sakon Nakhon	1,102,863	10.0	5.6	6.4	21.4	19	0.02	1,275	0	0.0	12.4	19.8	16.2	19
Nakhon Phanom	692,377	9.2	5.7	6.7	12.3	12	0.02	1,386	0	0.0	12.6	14.7	13.6	52
Mukdahan	333,338	11.1	5.7	6.0	na	53	0.16	699	0	0.0	28.8	32.1	30.4	6
<b>Northern Region</b>	<b>11,862,908</b>	<b>11.1</b>	<b>7.2</b>	<b>7.5</b>	<b>na</b>	<b>1,864</b>	<b>0.16</b>	<b>81,100</b>	<b>261</b>	<b>2.2</b>	<b>24.9</b>	<b>29.7</b>	<b>27.3</b>	<b>19</b>
Chiang Mai	1,640,389	11.8	8.5	8.1	37.0	298	0.18	17,911	70	4.3	25.8	27.4	26.6	20
Lamphun	404,754	12.4	9.0	12.7	na	36	0.09	4,607	49	12.0	19.5	28.0	23.8	37
Lampang	777,826	10.6	8.5	8.7	na	101	0.13	8,947	27	3.4	25.3	32.3	28.8	32
Uttaradit	469,665	8.6	7.6	6.2	22.2	0	0.00	1,023	19	4.0	28.9	34.6	31.7	5
Phrae	472,404	9.8	9.0	4.4	na	21	0.04	2,513	26	5.4	22.3	29.1	25.8	18
Nan	477,917	10.3	6.4	7.9	na	0	0.00	2,508	0	0.0	25.0	28.1	26.6	6
Phayao	487,616	9.2	8.1	6.2	na	41	0.08	10,066	7	1.4	9.7	14.1	11.9	29
Chiang Rai	1,219,732	11.8	7.5	7.4	na	354	0.29	16,204	0	0.0	39.9	46.1	42.8	20
Mae Hong Son	248,672	18.3	4.6	7.2	na	22	0.09	1,378	13	5.4	15.1	12.7	14.0	26
Nakhon Sawan	1,077,632	8.0	7.1	7.9	9.3	660	0.60	2,976	2	0.2	18.5	24.4	21.7	19
Uthai Thani	326,366	9.2	6.2	8.8	29.3	6	0.02	639	2	0.6	14.7	22.5	18.4	8
Kamphaeng Phet	727,351	9.5	5.7	4.4	42.7	64	0.09	2,436	24	3.2	35.7	43.0	39.3	17
Tak	519,037	20.3	4.9	5.0	36.5	0	0.00	950	0	0.0	22.9	25.2	24.1	11
Sukhothai	610,869	9.1	6.5	8.5	36.8	25	0.04	2,128	16	2.6	26.0	28.5	27.1	15
Phitsanulok	841,247	10.2	7.6	11.7	34.2	221	0.26	2,339	1	0.1	26.3	34.6	30.3	14
Phichit	559,611	8.1	7.0	8.6	na	15	0.03	1,817	5	0.9	22.5	29.5	26.0	10
Phetchabun	1,001,820	9.8	5.6	4.2	21.7	0	0.00	2,658	0	0.0	18.1	21.3	19.7	22
<b>Southern Region</b>	<b>8,474,778</b>	<b>8.9</b>	<b>5.6</b>	<b>8.3</b>	<b>na</b>	<b>2,275</b>	<b>0.27</b>	<b>24,904</b>	<b>363</b>	<b>4.3</b>	<b>15.1</b>	<b>19.4</b>	<b>17.2</b>	<b>14</b>
Nakhon Si Thammarat	1,502,381	8.3	5.5	6.8	27.3	181	0.12	2,604	45	3.0	20.5	24.9	22.5	6
Krabi	391,708	8.7	4.9	6.1	na	24	0.06	1,244	5	1.3	18.7	26.2	22.6	10
Phang-nga	240,253	9.5	5.1	5.1	na	11	0.05	705	0	0.0	8.1	6.5	7.3	8
Phuket	289,073	7.9	6.2	5.6	29.6	666	2.36	2,413	52	18.4	11.3	10.9	11.1	7
Surat Thani	942,800	9.5	5.6	9.6	13.5	247	0.26	2,833	68	7.3	13.5	19.8	16.8	32

Table AII.1 Health (continued)

Location	Alcohol consumption 2004			Cigarette smoking 2004			Unhealthy behaviour 2004 (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>45.8</b>	<b>8.9</b>	<b>27.2</b>	<b>40.1</b>	<b>2.4</b>	<b>21.1</b>	<b>61.0</b>	<b>10.8</b>	<b>35.7</b>
<b>Bangkok</b>	<b>35.5</b>	<b>5.5</b>	<b>19.7</b>	<b>28.9</b>	<b>1.2</b>	<b>14.3</b>	<b>49.0</b>	<b>6.6</b>	<b>26.6</b>
<b>Bangkok Vicinity</b>	<b>47.7</b>	<b>7.4</b>	<b>27.4</b>	<b>32.6</b>	<b>1.8</b>	<b>17.1</b>	<b>58.6</b>	<b>8.8</b>	<b>33.5</b>
Nakhon Pathom	38.0	5.0	22.2	29.0	0.4	15.3	53.6	5.5	30.5
Nonthaburi	34.5	4.8	19.4	20.8	2.0	11.2	42.7	7.8	24.9
Pathum Thani	37.9	3.7	21.2	22.2	1.6	12.1	45.4	4.9	25.6
Samut Prakan	62.9	12.1	36.7	42.7	1.9	21.6	73.2	12.8	42.0
Samut Sakhon	46.2	3.7	24.3	39.3	3.3	20.8	62.7	6.8	34.0
<b>Central Region</b>	<b>39.1</b>	<b>7.1</b>	<b>22.6</b>	<b>38.5</b>	<b>3.0</b>	<b>20.2</b>	<b>55.6</b>	<b>9.3</b>	<b>31.7</b>
Chai Nat	47.2	16.7	31.2	49.7	4.0	25.7	65.2	17.4	40.2
Phra Nakhon Si Ayutthaya	38.6	0.7	19.6	36.6	0.5	18.5	53.9	2.0	27.9
Lop Buri	40.0	6.8	22.2	37.0	4.2	19.4	54.8	10.0	30.8
Saraburi	41.7	13.5	27.5	41.2	4.9	22.9	62.2	17.5	39.7
Sing Buri	26.9	0.4	12.5	32.3	0.8	15.1	38.5	1.7	18.5
Ang Thong	31.7	5.4	18.7	33.9	3.0	18.6	49.4	6.5	28.2
<b>Eastern Region</b>	<b>39.6</b>	<b>7.6</b>	<b>23.2</b>	<b>38.8</b>	<b>3.3</b>	<b>20.6</b>	<b>57.8</b>	<b>10.7</b>	<b>33.7</b>
Chanthaburi	48.4	3.5	26.1	38.6	3.1	21.0	59.1	6.7	33.0
Chachoengsao	25.9	3.2	14.3	39.1	4.9	21.6	52.7	6.6	29.1
Chon Buri	39.2	9.2	23.2	38.7	4.2	20.3	56.5	12.0	32.8
Trat	34.4	3.1	18.9	36.8	3.3	20.2	52.6	6.0	29.6
Nakhon Nayok	43.0	5.4	24.0	38.4	2.6	20.3	56.9	8.4	32.3
Prachin Buri	42.5	14.3	27.3	39.7	3.6	20.2	59.6	17.8	37.0
Rayong	45.3	7.1	26.5	36.3	0.9	18.9	62.6	8.8	36.1
Sa Kaeo	39.5	12.9	26.4	43.1	2.7	23.2	60.4	17.5	39.3
<b>Western Region</b>	<b>35.4</b>	<b>3.7</b>	<b>19.5</b>	<b>38.2</b>	<b>2.9</b>	<b>20.5</b>	<b>54.4</b>	<b>6.0</b>	<b>30.1</b>
Ratchaburi	32.0	6.2	18.8	37.8	3.2	20.1	55.2	9.1	31.6
Kanchanaburi	42.7	3.1	23.1	44.2	3.2	24.0	59.7	6.0	33.2
Suphan Buri	36.1	2.5	20.1	36.5	1.6	19.8	51.5	3.3	28.5
Samut Songkhram	36.5	1.6	17.9	37.6	0.8	18.0	52.9	2.9	26.2
Phetchaburi	34.4	1.6	17.7	35.9	1.6	18.4	53.3	2.7	27.5
Prachuap Khiri Khan	31.0	5.0	17.6	36.6	6.9	21.3	53.0	9.5	30.6
<b>Northeastern Region</b>	<b>53.7</b>	<b>10.1</b>	<b>32.0</b>	<b>45.0</b>	<b>0.8</b>	<b>23.1</b>	<b>65.8</b>	<b>10.7</b>	<b>38.5</b>
Nakhon Ratchasima	48.7	7.7	26.7	44.3	1.7	21.4	63.0	8.8	33.9
Buri Ram	50.6	16.5	33.1	50.5	0.0	24.6	67.4	16.6	41.3
Surin	44.0	9.5	27.0	42.3	0.8	21.9	59.4	11.9	36.0
Si Sa Ket	55.1	9.4	33.1	46.2	1.5	24.7	70.3	10.3	41.4
Ubon Ratchathani	50.6	7.4	29.5	42.4	0.4	21.9	62.3	7.5	35.6
Yasothon	52.3	10.8	32.0	46.8	0.1	23.9	62.3	11.4	37.4
Chaiyaphum	56.8	8.6	33.6	48.0	0.7	25.2	72.7	10.8	42.9
Amnat Charoen	57.6	4.6	30.8	41.2	0.6	20.7	66.5	4.6	35.2
Nong Bua Lam Phu	55.7	5.2	31.6	49.5	0.2	26.0	65.5	5.4	36.8
Khon Kaen	59.6	17.6	39.0	42.7	0.6	22.1	67.5	18.0	43.2
Udon Thani	53.8	6.0	30.2	42.5	0.9	21.9	63.0	6.0	34.8
Loei	62.4	11.7	38.0	52.1	0.1	27.1	72.4	11.7	43.3
Nong Khai	55.4	11.3	34.4	39.6	0.9	21.2	61.8	11.3	37.8
Maha Sarakham	51.6	10.0	30.7	44.5	0.1	22.1	66.8	10.6	38.5
Roi Et	52.0	16.2	34.6	40.1	1.2	21.1	62.5	16.6	40.1
Kalasin	55.6	9.6	33.7	48.8	1.0	26.0	70.8	10.0	41.8
Sakon Nakhon	58.3	5.3	31.7	46.8	1.3	24.0	69.3	5.8	37.5
Nakhon Phanom	54.2	11.3	32.4	45.9	0.6	22.9	61.2	12.1	36.2
Mukdahan	67.5	7.2	37.5	54.6	1.2	28.0	77.0	8.3	42.8
<b>Northern Region</b>	<b>53.6</b>	<b>17.9</b>	<b>35.9</b>	<b>39.5</b>	<b>6.4</b>	<b>23.0</b>	<b>68.8</b>	<b>22.2</b>	<b>45.7</b>
Chiang Mai	52.5	21.6	37.3	39.6	7.1	23.6	67.5	26.5	47.3
Lamphun	55.9	21.9	39.5	34.8	4.1	20.0	71.9	25.7	49.6
Lampang	58.9	13.2	36.4	38.6	8.0	23.5	71.6	20.0	46.2
Uttaradit	54.3	21.6	38.0	35.8	5.0	20.5	70.7	24.1	47.5
Phrae	56.0	23.8	39.2	39.1	7.1	22.4	72.9	27.5	49.2
Nan	68.6	29.9	50.1	29.0	3.4	16.8	72.3	31.8	52.9
Phayao	61.4	27.5	43.9	39.0	6.2	22.1	70.0	30.6	49.7
Chiang Rai	57.0	30.4	45.1	27.3	12.4	20.6	71.0	39.7	57.0
Mae Hong Son	56.0	9.1	34.6	41.5	8.3	26.4	67.2	15.0	43.4
Nakhon Sawan	36.5	6.3	20.2	40.5	2.3	20.0	54.8	8.3	29.8
Uthai Thani	46.8	8.1	27.2	51.6	5.0	28.0	66.9	9.6	37.8
Kamphaeng Phet	49.0	19.3	34.3	42.6	3.2	23.1	70.5	20.9	46.0
Tak	56.1	20.6	37.1	48.4	22.3	34.4	71.5	33.9	51.3
Sukhothai	51.5	13.5	32.1	41.8	4.7	22.9	69.0	17.1	42.5
Phitsanulok	62.1	15.6	38.8	49.4	1.8	25.6	76.8	16.5	46.7
Phichit	44.2	6.7	25.9	43.9	5.3	25.1	61.7	10.9	37.0
Phetchabun	54.6	10.2	32.7	43.2	2.7	23.2	69.4	12.4	41.3
<b>Southern Region</b>	<b>31.0</b>	<b>1.3</b>	<b>16.1</b>	<b>46.6</b>	<b>1.6</b>	<b>24.1</b>	<b>55.7</b>	<b>2.5</b>	<b>29.0</b>
Nakhon Si Thammarat	41.2	1.4	21.4	53.7	1.8	27.9	61.6	2.4	32.2
Krabi	27.2	0.9	14.0	48.4	0.6	24.4	53.9	2.0	27.8
Phang-nga	24.5	1.8	13.3	35.3	1.0	18.4	45.7	2.8	24.6
Phuket	41.0	2.3	21.1	34.0	0.5	16.8	56.6	2.5	28.8
Surat Thani	37.1	2.6	20.9	43.4	2.3	24.1	55.0	3.5	30.9
Ranong	36.5	1.1	18.6	54.1	1.6	27.5	61.4	2.7	31.7
Chumphon	37.7	2.9	18.9	45.0	2.4	22.0	55.7	5.0	28.3
Songkhla	35.7	1.5	18.4	42.5	1.5	21.8	55.6	2.4	28.8
Satun	17.7	0.2	9.0	49.9	0.7	25.5	55.0	0.7	28.1
Trang	39.4	0.1	19.4	51.2	0.6	25.5	60.8	0.6	30.2
Phatthalung	34.7	0.2	17.8	54.6	0.0	27.8	62.3	0.3	31.8
Pattani	10.3	0.7	5.2	40.5	3.0	20.4	44.5	3.8	22.7
Yala	8.4	1.2	4.8	47.1	1.9	24.6	51.4	2.2	26.9
Narathiwat	9.2	0.4	4.9	43.3	3.0	23.5	47.2	3.1	25.6

See Annex III for data sources

Table AII.1 Health (continued)

Location	Disability 2002			Population with disability and/or impairment and chronic illness 2002			Population per health personnel/infrastructure 2004				
	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>1.8</b>	<b>0.9</b>	<b>1.7</b>	<b>4.2</b>	<b>5.7</b>	<b>5.0</b>	<b>3,305</b>	<b>15,143</b>	<b>8,432</b>	<b>652</b>	<b>469</b>
<b>Bangkok</b>	<b>0.8</b>	<b>0.3</b>	<b>0.7</b>	<b>3.7</b>	<b>4.5</b>	<b>4.1</b>	<b>879</b>	<b>5,583</b>	<b>4,632</b>	<b>289</b>	<b>224</b>
<b>Bangkok Vicinity</b>	<b>1.2</b>	<b>0.4</b>	<b>1.0</b>	<b>3.0</b>	<b>3.8</b>	<b>3.4</b>	<b>2,738</b>	<b>14,550</b>	<b>7,726</b>	<b>660</b>	<b>326</b>
Nakhon Pathom	1.1	0.4	1.0	3.0	4.1	3.6	3,195	16,104	8,752	751	506
Nonthaburi	2.9	1.1	2.5	3.4	2.9	3.1	2,544	11,385	7,019	550	248
Pathum Thani	0.7	0.2	0.6	2.9	4.1	3.5	2,764	13,722	6,679	610	295
Samut Prakan	1.3	0.3	1.0	3.1	3.6	3.4	2,894	18,708	8,954	839	371
Samut Sakhon	1.9	0.6	1.5	3.3	3.2	3.2	2,205	14,369	7,302	565	295
<b>Central Region</b>	<b>1.1</b>	<b>0.7</b>	<b>1.2</b>	<b>3.5</b>	<b>5.2</b>	<b>4.4</b>	<b>3,740</b>	<b>17,674</b>	<b>8,998</b>	<b>569</b>	<b>427</b>
Chai Nat	1.0	0.9	1.4	3.7	5.9	4.8	5,079	23,024	9,088	622	519
Phra Nakhon Si Ayutthaya	0.8	0.6	1.0	3.1	4.7	3.9	4,311	17,758	9,944	667	608
Lop Buri	2.2	1.0	2.0	3.5	4.8	4.2	4,491	19,462	11,162	715	410
Saraburi	0.9	0.5	1.0	3.3	5.1	4.2	2,433	15,660	7,101	461	332
Sing Buri	0.7	0.3	0.7	4.1	5.7	4.9	3,119	11,071	6,710	357	300
Ang Thong	1.1	0.6	1.1	3.5	5.4	4.5	4,627	22,069	9,563	534	448
<b>Eastern Region</b>	<b>1.5</b>	<b>0.5</b>	<b>1.3</b>	<b>3.3</b>	<b>4.2</b>	<b>3.7</b>	<b>2,840</b>	<b>16,332</b>	<b>8,244</b>	<b>533</b>	<b>406</b>
Chanthaburi	1.2	0.6	1.1	3.6	5.0	4.3	2,718	17,957	7,981	439	381
Chachoengsao	1.1	0.5	1.1	2.8	3.9	3.4	5,226	25,919	11,172	764	593
Chon Buri	1.0	0.3	0.8	2.8	3.6	3.2	1,858	11,275	6,250	399	290
Trat	1.1	0.6	1.1	3.4	4.3	3.9	3,516	24,610	10,668	412	378
Nakhon Nayok	1.5	0.5	1.2	3.2	4.3	3.7	1,406	8,937	6,103	397	318
Prachin Buri	1.7	0.5	1.3	3.6	4.7	4.1	4,687	21,426	7,758	635	429
Rayong	3.1	1.2	2.7	3.8	3.3	3.6	3,074	19,654	7,862	601	506
Sa Kaeo	2.7	0.9	2.3	4.1	3.5	3.8	7,281	23,427	19,956	1,289	718
<b>Western Region</b>	<b>1.2</b>	<b>0.5</b>	<b>1.1</b>	<b>3.2</b>	<b>4.5</b>	<b>3.9</b>	<b>4,372</b>	<b>18,399</b>	<b>8,819</b>	<b>640</b>	<b>432</b>
Ratchaburi	1.4	0.6	1.3	3.4	4.8	4.1	2,893	19,629	7,633	467	305
Kanchanaburi	0.8	0.3	0.7	3.1	4.5	3.9	5,153	22,328	11,011	836	512
Suphan Buri	1.5	0.6	1.4	3.3	4.5	3.9	5,852	20,838	9,820	743	503
Samut Songkhram	1.5	0.8	1.4	3.1	4.0	3.6	4,642	13,307	6,439	484	398
Phetchaburi	0.8	0.5	0.9	2.6	4.3	3.4	4,388	10,866	7,606	623	478
Prachuap Khiri Khan	1.6	0.6	1.4	3.4	3.9	3.7	5,117	23,147	9,348	756	509
<b>Northeastern Region</b>	<b>2.2</b>	<b>1.3</b>	<b>2.4</b>	<b>5.3</b>	<b>7.5</b>	<b>6.4</b>	<b>7,466</b>	<b>24,699</b>	<b>13,048</b>	<b>1,045</b>	<b>747</b>
Nakhon Ratchasima	2.6	2.0	3.3	4.7	7.8	6.2	5,182	24,430	13,155	957	662
Buri Ram	2.8	1.7	3.0	5.9	8.7	7.3	8,504	29,040	16,374	1,407	846
Surin	2.3	0.9	2.2	5.5	6.3	5.9	10,213	33,072	14,777	1,298	794
Si Sa Ket	2.5	1.4	2.7	5.8	8.3	7.0	12,210	38,236	15,967	1,331	1,091
Ubon Ratchathani	3.2	1.6	3.2	5.2	6.9	6.0	7,024	25,129	11,511	907	586
Yasothon	2.6	0.6	1.9	5.5	7.1	6.3	8,290	36,476	11,399	891	749
Chaiyaphum	2.3	1.3	2.4	6.4	9.1	7.7	10,846	24,522	15,452	1,256	1,041
Ammat Charoen	2.2	1.1	2.2	4.2	6.1	5.1	9,002	20,504	11,184	984	820
Nong Bua Lam Phu	1.6	0.8	1.6	4.9	6.7	5.8	10,811	31,081	14,626	1,262	1,135
Khon Kaen	1.2	0.9	1.6	4.9	7.8	6.3	3,697	9,649	8,567	655	492
Udon Thani	2.0	1.3	2.3	4.8	6.0	5.4	6,246	22,504	11,863	973	677
Loei	1.9	1.0	2.0	5.2	7.4	6.3	7,349	22,862	11,647	866	621
Nong Khai	3.3	1.8	3.4	5.9	7.4	6.7	8,868	27,409	15,595	1,152	924
Maha Sarakham	2.6	1.3	2.7	4.7	7.1	5.8	9,997	30,313	11,746	1,217	873
Roi Et	2.9	1.7	3.2	5.2	7.2	6.2	10,126	47,011	14,465	1,197	932
Kalasin	1.5	0.8	1.6	4.6	7.2	5.9	10,239	28,084	15,602	1,206	890
Sakon Nakhon	1.6	0.9	1.6	5.6	6.8	6.2	10,967	33,566	16,783	1,386	821
Nakhon Phanom	2.8	1.4	2.8	4.8	6.9	5.8	10,782	41,224	12,742	975	808
Mukdahan	2.1	0.8	1.9	5.7	7.7	6.7	8,191	30,529	11,994	825	560
<b>Northern Region</b>	<b>2.0</b>	<b>0.8</b>	<b>1.8</b>	<b>4.8</b>	<b>6.4</b>	<b>5.6</b>	<b>4,534</b>	<b>16,039</b>	<b>9,037</b>	<b>684</b>	<b>503</b>
Chiang Mai	1.6	0.6	1.3	5.2	7.0	6.1	2,392	7,284	6,710	427	269
Lamphun	4.3	2.0	4.2	5.5	6.3	5.9	5,897	19,377	8,304	700	500
Lampang	2.1	0.9	2.0	4.8	6.2	5.5	3,921	17,132	8,295	565	486
Uttaradit	1.6	0.6	1.4	4.5	5.8	5.1	3,604	11,895	7,552	629	551
Phrae	1.9	0.7	1.6	5.2	7.5	6.4	5,621	23,890	8,382	620	615
Nan	2.0	0.8	1.9	5.3	6.7	6.0	5,106	17,777	9,230	649	571
Phayao	2.0	0.9	1.9	4.8	6.0	5.4	5,155	21,519	10,311	585	591
Chiang Rai	2.0	0.6	1.7	5.4	6.2	5.8	6,104	22,494	11,144	890	610
Mae Hong Son	4.7	2.1	4.6	5.0	5.0	5.0	5,604	15,062	8,033	588	524
Nakhon Sawan	2.0	1.0	2.1	5.0	6.8	5.9	4,444	22,492	8,543	790	555
Uthai Thani	3.6	1.3	3.1	4.7	4.7	4.7	5,455	17,513	8,993	680	504
Kamphaeng Phet	1.1	0.5	1.1	3.7	6.6	5.1	9,873	23,448	13,895	1,212	911
Tak	1.5	0.6	1.3	3.6	4.9	4.2	4,925	15,853	9,224	645	506
Sukhothai	3.9	1.5	3.4	5.3	5.9	5.6	4,743	21,260	9,944	749	547
Phitsanulok	4.1	1.7	3.6	5.4	4.7	5.1	3,274	15,535	7,241	635	463
Phichit	1.8	0.8	1.7	4.5	6.6	5.5	7,826	22,275	10,725	874	598
Phetchabun	2.9	1.5	3.0	4.1	5.1	4.6	11,283	29,335	14,461	1,408	869
<b>Southern Region</b>	<b>1.9</b>	<b>0.9</b>	<b>1.9</b>	<b>3.1</b>	<b>3.4</b>	<b>3.3</b>	<b>3,982</b>	<b>15,620</b>	<b>8,292</b>	<b>659</b>	<b>501</b>
Nakhon Si Thammarat	2.4	1.3	2.4	3.0	2.9	2.9	6,562	26,133	11,311	933	694
Krabi	1.2	0.6	1.3	3.5	3.9	3.7	7,285	22,711	8,979	774	657
Phang-nga	1.2	0.5	1.2	3.4	5.1	4.1	3,998	14,111	7,739	439	416
Phuket	0.9	0.5	1.0	2.4	3.2	2.8	1,700	10,853	4,703	406	284
Surat Thani	1.6	0.7	1.5	3.6	3.9	3.7	4,661	19,518	7,098	544	352
Ranong	2.8	1.1	2.6	3.7	2.9	3.3	4,357	15,446	6,796	484	396
Chumphon	3.3	1.2	2.9	4.0	3.3	3.7	5,215	21,572	8,955	673	399
Songkhla	2.6	1.0	2.2	3.5	2.9	3.2	1,738	7,576	7,621	504	378
Satun	0.5	0.3	0.5	2.4	3.5	3.0	5,472	16,096	8,292	724	748
Trang	1.4	0.8	1.5	2.9	3.5	3.2	4,976	16,272	6,544	707	513
Phatthalung	2.6	1.2	2.5	4.2	5.0	4.6	6,686	20,894	9,643	741	668
Pattani	1.7	0.8	1.7	2.9	3.5	3.2	7,903	21,801	10,036	993	766
Yala	2.1	0.9	2.0	2.4	2.2	2.3	3,479	12,175	6,169	557	497
Narathiwat	2.4	1.2	2.4	3.1	3.1	3.1	8,247	25,036	11,882	909	858

See Annex III for data sources

Table AII.2 Education

Location	Mean years of schooling 2005			Population with no education 2005				Educational attainment of population aged 15+ 2005					
	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>8.3</b>	<b>8.1</b>	<b>8.2</b>	<b>827,599</b>	<b>1,868,268</b>	<b>2,695,867</b>	<b>5.4</b>	<b>34.6</b>	<b>19.7</b>	<b>16.4</b>	<b>12.1</b>	<b>3.3</b>	<b>8.0</b>
<b>Bangkok</b>	<b>11.0</b>	<b>10.7</b>	<b>10.8</b>	<b>46,460</b>	<b>141,568</b>	<b>188,028</b>	<b>3.3</b>	<b>19.4</b>	<b>15.6</b>	<b>15.6</b>	<b>18.4</b>	<b>4.4</b>	<b>22.5</b>
<b>Bangkok Vicinity</b>	<b>9.8</b>	<b>9.6</b>	<b>9.7</b>	<b>28,742</b>	<b>72,557</b>	<b>101,299</b>	<b>2.7</b>	<b>22.7</b>	<b>16.4</b>	<b>19.3</b>	<b>19.1</b>	<b>5.9</b>	<b>12.4</b>
Nakhon Pathom	8.5	8.3	8.4	9,587	16,414	26,000	3.5	33.0	19.5	18.1	15.2	3.7	7.0
Nonthaburi	11.0	10.8	10.9	6,600	19,486	26,086	2.7	17.8	13.7	16.3	19.6	6.6	21.4
Pathum Thani	10.3	10.0	10.2	2,787	6,698	9,485	1.6	21.8	11.6	21.0	23.9	8.0	11.8
Samut Prakan	10.0	9.8	9.9	2,574	16,830	19,404	1.9	19.6	16.2	22.3	21.3	6.2	11.2
Samut Sakhon	8.4	8.2	8.3	7,193	13,130	20,323	4.9	24.8	24.7	18.2	12.9	4.1	5.7
<b>Central Region</b>	<b>8.3</b>	<b>7.9</b>	<b>8.1</b>	<b>24,955</b>	<b>79,852</b>	<b>104,807</b>	<b>4.3</b>	<b>38.1</b>	<b>15.9</b>	<b>17.3</b>	<b>12.8</b>	<b>4.5</b>	<b>7.1</b>
Chai Nat	7.9	7.5	7.7	6,712	14,120	20,831	7.3	39.4	18.6	13.5	10.6	4.9	5.6
Phra Nakhon Si Ayutthaya	8.6	8.3	8.5	3,624	13,651	17,275	3.0	36.7	14.3	18.8	14.4	3.6	9.3
Lop Buri	7.7	7.3	7.5	6,494	25,617	32,111	5.4	41.4	18.6	15.3	10.4	3.4	5.2
Saraburi	8.6	8.1	8.4	4,379	15,936	20,315	3.8	36.7	13.9	18.2	13.7	6.5	7.2
Sing Buri	8.8	8.5	8.7	1,602	4,438	6,041	3.1	34.7	14.2	19.1	14.8	4.9	9.1
Ang Thong	8.4	7.9	8.1	2,144	6,091	8,235	3.7	37.3	15.4	19.7	13.5	4.3	6.0
<b>Eastern Region</b>	<b>8.2</b>	<b>8.0</b>	<b>8.1</b>	<b>43,124</b>	<b>118,211</b>	<b>161,335</b>	<b>4.7</b>	<b>33.9</b>	<b>18.3</b>	<b>17.9</b>	<b>12.4</b>	<b>4.4</b>	<b>6.7</b>
Chanthaburi	7.8	7.7	7.8	2,798	13,228	16,025	3.9	38.1	20.4	16.0	12.4	2.5	6.5
Chachoengsao	8.1	8.0	8.1	6,049	20,317	26,365	5.1	36.2	16.9	19.5	12.4	2.9	6.7
Chon Buri	8.5	8.5	8.5	6,981	20,628	27,609	3.1	27.7	15.5	21.0	13.8	5.6	7.9
Trat	7.3	7.1	7.2	5,679	8,696	14,375	7.6	37.0	25.8	12.2	9.0	2.0	4.2
Nakhon Nayok	8.1	7.8	8.0	2,470	7,603	10,073	5.5	35.6	18.9	17.5	13.3	3.3	5.9
Prachin Buri	8.3	8.0	8.1	3,905	10,357	14,262	4.4	37.7	13.8	19.6	13.0	6.1	5.3
Rayong	9.1	8.5	8.8	4,684	12,353	17,037	4.1	30.0	18.5	15.4	12.9	8.2	9.4
Sa Kaeo	7.6	7.2	7.4	10,559	25,030	35,589	6.8	37.8	22.4	15.6	10.3	2.3	4.8
<b>Western Region</b>	<b>7.7</b>	<b>7.4</b>	<b>7.6</b>	<b>49,090</b>	<b>135,080</b>	<b>184,170</b>	<b>6.5</b>	<b>38.7</b>	<b>19.6</b>	<b>16.6</b>	<b>10.1</b>	<b>2.9</b>	<b>5.4</b>
Ratchaburi	7.8	7.5	7.6	8,143	29,858	38,001	5.7	40.1	16.2	18.4	10.3	2.8	6.0
Kanchanaburi	7.7	7.4	7.6	17,130	45,064	62,193	9.6	36.4	20.5	15.1	10.7	3.0	4.6
Suphan Buri	7.4	7.1	7.3	14,869	35,382	50,251	7.7	39.5	21.5	16.6	7.8	2.6	4.4
Samut Songkhram	8.2	7.8	8.0	2,344	4,485	6,829	4.8	33.0	23.5	18.2	10.7	3.1	6.6
Phetchaburi	8.2	7.8	8.0	1,569	7,072	8,641	2.5	40.7	17.0	15.9	12.6	3.5	7.8
Prachuap Khiri Khan	7.7	7.3	7.5	5,036	13,219	18,255	5.0	39.2	21.6	15.8	10.1	3.0	4.7
<b>Northeastern Region</b>	<b>7.4</b>	<b>7.0</b>	<b>7.2</b>	<b>149,204</b>	<b>397,229</b>	<b>546,434</b>	<b>3.4</b>	<b>40.7</b>	<b>24.7</b>	<b>15.7</b>	<b>9.3</b>	<b>2.0</b>	<b>4.3</b>
Nakhon Ratchasima	7.3	6.9	7.1	34,031	81,977	116,008	5.8	41.2	21.9	17.4	9.1	1.8	2.8
Buri Ram	6.9	6.8	6.9	11,277	62,710	73,987	6.3	42.0	23.7	15.5	8.1	0.7	3.7
Surin	7.4	6.9	7.2	17,462	40,812	58,274	5.3	41.9	22.6	14.5	8.9	1.8	5.0
Si Sa Ket	7.4	6.9	7.2	11,705	38,250	49,954	4.5	39.9	25.8	14.4	9.3	1.7	4.3
Ubon Ratchathani	7.2	6.9	7.0	10,413	21,890	32,303	2.6	41.5	26.3	16.2	8.5	1.1	3.8
Yasothon	7.1	6.3	6.7	126	1,310	1,436	0.4	47.1	28.2	12.1	6.9	2.2	3.1
Chaiyaphum	6.9	6.6	6.8	5,035	20,084	25,119	3.0	45.8	22.5	17.1	7.2	1.3	3.1
Amnat Charoen	7.5	7.1	7.3	1,444	1,308	2,752	0.7	41.0	24.4	17.1	10.3	2.0	4.4
Nong Bua Lam Phu	7.2	7.1	7.2	3,618	9,231	12,849	2.5	36.5	29.6	19.2	6.8	1.9	3.5
Khon Kaen	8.0	7.4	7.7	8,406	23,934	32,340	2.6	40.3	21.5	14.4	11.1	4.5	5.6
Udon Thani	7.5	7.3	7.4	7,169	14,613	21,782	2.0	37.4	26.6	17.4	10.6	1.7	4.0
Loei	7.1	6.9	7.0	7,119	16,362	23,481	4.7	42.7	25.2	13.4	8.1	1.3	4.4
Nong Khai	7.4	7.3	7.3	4,752	15,888	20,640	2.8	38.4	26.7	16.2	9.4	2.6	4.0
Maha Sarakham	7.6	6.9	7.3	1,789	9,950	11,739	1.8	41.9	25.2	14.5	8.9	2.6	5.1
Roi Et	7.7	7.3	7.5	1,212	9,664	10,876	1.1	42.3	21.5	14.4	12.5	1.6	6.6
Kalasin	7.7	7.1	7.4	3,002	3,054	6,056	0.8	39.4	27.4	15.0	9.9	2.5	5.1
Sakon Nakhon	7.6	7.3	7.4	7,405	8,699	16,105	2.0	37.1	29.6	15.0	9.3	1.8	5.3
Nakhon Phanom	7.7	7.1	7.4	10,927	8,050	18,977	4.5	36.8	27.3	15.1	10.0	2.8	3.6
Mukdahan	7.8	7.3	7.6	2,310	9,446	11,755	4.4	37.1	23.4	18.5	9.2	2.0	5.5
<b>Northern Region</b>	<b>7.7</b>	<b>7.5</b>	<b>7.6</b>	<b>342,707</b>	<b>640,623</b>	<b>983,330</b>	<b>10.7</b>	<b>39.2</b>	<b>16.2</b>	<b>15.1</b>	<b>10.3</b>	<b>2.6</b>	<b>5.6</b>
Chiang Mai	8.4	8.3	8.3	72,853	105,815	178,667	13.9	34.2	13.2	15.1	12.9	3.5	7.2
Lamphun	7.8	7.7	7.8	10,624	19,143	29,767	9.8	39.2	13.9	15.8	12.9	3.5	4.9
Lampang	7.8	7.4	7.6	25,161	42,371	67,532	10.7	40.0	14.8	16.1	9.2	3.4	5.8
Uttaradit	8.0	7.5	7.7	7,775	10,872	18,647	5.1	41.8	16.6	15.2	12.5	2.4	6.4
Phrae	7.6	7.9	7.8	4,631	9,129	13,760	3.9	44.2	12.2	18.2	11.2	4.3	6.0
Nan	8.2	8.0	8.1	16,656	21,906	38,562	10.6	33.9	15.2	18.3	13.3	3.8	4.9
Phayao	7.9	7.2	7.6	15,938	30,580	46,518	11.7	39.6	15.4	15.1	10.9	2.2	5.1
Chiang Rai	7.7	7.8	7.7	76,958	140,733	217,691	21.5	32.9	15.2	12.2	10.7	2.6	4.8
Mae Hong Son	7.4	8.2	7.7	29,574	26,517	56,092	33.4	18.2	25.0	12.3	7.0	1.2	2.9
Nakhon Sawan	7.3	7.2	7.3	8,220	47,466	55,686	7.1	44.7	17.5	14.0	8.9	2.2	5.6
Uthai Thani	7.5	7.3	7.4	4,916	11,673	16,589	7.1	42.1	18.0	15.6	9.1	2.7	5.4
Kamphaeng Phet	7.2	6.7	6.9	9,439	32,055	41,494	6.7	44.4	21.9	14.8	5.9	0.9	5.5
Tak	7.7	7.4	7.6	26,250	37,661	63,911	18.2	32.1	15.9	13.7	8.5	2.0	4.9
Sukhothai	7.1	6.6	6.8	3,496	17,825	21,321	4.5	48.0	19.5	14.4	8.5	1.3	3.8
Phitsanulok	7.9	8.3	8.1	10,353	20,784	31,137	5.1	38.6	16.1	15.1	13.8	3.7	7.6
Phichit	7.4	6.8	7.1	5,645	25,096	30,740	7.4	45.7	15.7	14.2	10.5	2.2	4.2
Phetchabun	7.3	7.0	7.1	14,220	40,996	55,216	6.9	42.9	17.6	18.5	7.6	1.6	4.9
<b>Southern Region</b>	<b>8.4</b>	<b>8.5</b>	<b>8.4</b>	<b>143,316</b>	<b>283,146</b>	<b>426,463</b>	<b>6.6</b>	<b>30.2</b>	<b>20.0</b>	<b>17.7</b>	<b>12.9</b>	<b>4.2</b>	<b>7.7</b>
Nakhon Si Thammarat	8.1	8.1	8.1	10,353	29,245	39,598	3.3	34.1	20.9	17.7	11.8	4.8	6.5
Krabi	8.2	8.3	8.2	4,272	9,381	13,654	4.7	31.0	23.5	17.3	11.9	4.8	6.8
Phang-nga	7.5	7.9	7.7	3,342	6,424	9,766	5.5	32.8	27.7	14.6	8.6	2.4	6.8
Phuket	10.0	10.1	10.0	3,213	4,529	7,741	3.4	19.8	12.1	19.6	18.2	7.0	15.8
Surat Thani	8.6	8.4	8.5	6,163	19,433	25,595	3.5	31.4	19.0	19.7	13.3	3.5	8.5
Ranong	7.4	7.4	7.4	6,198	11,228	17,426	12.6	34.3	17.7	18.0	9.5	2.6	3.3
Chumphon	8.5	8.2	8.4	3,792	4,723	8,515	2.3	32.6	19.0	19.4	14.1	3.5	7.7
Songkhla	9.4	9.6	9.5	17,278	38,151	55,429	5.6	25.2	17.0	18.4	16.5	5.6	11.8
Satun	8.2	8.0	8.1	3,983									

**Table AII.2 Education (continued)**

Location	Gross enrolment 2005									Quality of education (average score) 2004			Students per class room 2005		
	Primary (%)			Lower secondary (%)			Upper secondary & vocational (%)			Primary	Lower secondary	Upper secondary	Primary	Lower secondary	Upper secondary
	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>104.4</b>	<b>103.5</b>	<b>104.0</b>	<b>92.8</b>	<b>95.5</b>	<b>94.1</b>	<b>57.2</b>	<b>68.4</b>	<b>62.7</b>	<b>42.2</b>	<b>37.4</b>	<b>40.3</b>	<b>23</b>	<b>36</b>	<b>46</b>
<b>Bangkok</b>	<b>110.3</b>	<b>109.5</b>	<b>109.9</b>	<b>97.0</b>	<b>99.3</b>	<b>98.1</b>	<b>94.6</b>	<b>106.6</b>	<b>100.5</b>	<b>51.8</b>	<b>44.5</b>	<b>52.4</b>	<b>36</b>	<b>42</b>	<b>36</b>
<b>Bangkok Vicinity</b>	<b>107.0</b>	<b>106.3</b>	<b>106.7</b>	<b>91.0</b>	<b>93.0</b>	<b>92.0</b>	<b>48.7</b>	<b>57.9</b>	<b>53.2</b>	<b>43.6</b>	<b>40.8</b>	<b>45.4</b>	<b>33</b>	<b>42</b>	<b>36</b>
Nakhon Pathom	120.7	117.0	118.9	106.5	106.9	106.7	63.7	73.1	68.3	44.0	39.2	50.9	30	43	36
Nonthaburi	98.3	98.4	98.3	82.2	86.3	84.2	39.9	58.8	49.3	45.5	42.3	48.3	33	43	38
Pathum Thani	105.2	104.0	104.6	93.5	92.4	93.0	54.6	57.9	56.2	39.4	38.6	41.7	32	41	35
Samut Prakan	105.9	107.2	106.5	90.7	95.3	92.9	43.9	51.8	47.8	43.0	44.1	41.9	34	41	35
Samut Sakhon	106.7	105.2	106.0	77.0	78.5	77.7	39.8	43.6	41.7	46.3	39.7	44.4	32	40	36
<b>Central Region</b>	<b>106.9</b>	<b>106.1</b>	<b>106.5</b>	<b>100.0</b>	<b>99.8</b>	<b>99.9</b>	<b>70.8</b>	<b>74.9</b>	<b>72.8</b>	<b>40.5</b>	<b>37.8</b>	<b>39.9</b>	<b>22</b>	<b>34</b>	<b>33</b>
Chai Nat	95.9	94.9	95.4	90.6	91.4	91.0	79.4	61.2	70.7	35.8	36.8	38.0	18	32	43
Phra Nakhon Si Ayutthaya	114.8	113.6	114.2	105.8	103.2	104.5	67.3	74.1	70.6	42.7	36.3	38.7	24	36	31
Lop Buri	102.1	102.2	102.1	100.5	104.7	102.5	72.3	84.3	78.2	40.4	41.2	43.1	22	36	34
Saraburi	106.2	106.1	106.2	92.5	93.9	93.2	60.0	70.9	69.9	40.8	38.0	39.9	23	35	36
Sing Buri	113.2	111.5	112.4	112.6	102.5	107.7	85.3	84.7	85.0	42.8	37.7	40.1	18	26	27
Ang Thong	107.5	104.7	106.1	102.3	99.2	100.8	59.3	68.2	63.5	40.8	36.8	39.3	20	33	29
<b>Eastern Region</b>	<b>112.3</b>	<b>111.5</b>	<b>111.9</b>	<b>102.6</b>	<b>103.1</b>	<b>102.9</b>	<b>62.6</b>	<b>73.2</b>	<b>67.8</b>	<b>44.8</b>	<b>38.0</b>	<b>42.4</b>	<b>26</b>	<b>38</b>	<b>36</b>
Chanthaburi	111.5	111.0	111.2	96.5	100.1	98.3	57.3	69.7	63.4	46.7	38.1	39.8	27	40	41
Chachoengsao	110.0	108.0	109.0	103.4	102.7	103.1	64.1	67.0	65.5	48.6	36.9	40.4	24	38	43
Chon Buri	119.4	119.1	119.3	110.0	108.9	109.5	78.4	90.2	84.1	45.1	40.9	45.7	32	42	38
Trat	113.1	112.4	112.8	93.5	98.9	96.1	51.1	62.1	56.5	49.3	37.7	40.0	21	30	27
Nakhon Nayok	107.2	106.4	106.8	105.9	102.7	104.3	52.7	69.6	60.3	45.0	39.5	53.8	20	33	30
Prachin Buri	106.9	106.2	106.5	104.1	103.4	103.7	63.9	78.2	70.9	40.5	36.2	41.1	21	36	34
Rayong	122.3	121.5	121.9	106.6	107.4	107.0	62.8	71.4	67.0	44.6	41.4	41.9	29	38	33
Sa Kaeo	97.0	95.8	96.4	89.2	91.6	90.4	42.9	54.1	48.4	38.7	33.3	36.1	23	36	35
<b>Western Region</b>	<b>110.0</b>	<b>108.5</b>	<b>109.2</b>	<b>93.3</b>	<b>96.2</b>	<b>94.7</b>	<b>49.9</b>	<b>61.5</b>	<b>55.5</b>	<b>44.5</b>	<b>39.3</b>	<b>42.9</b>	<b>23</b>	<b>36</b>	<b>34</b>
Ratchaburi	113.2	111.6	112.4	94.6	94.2	94.4	54.6	64.8	59.5	46.5	41.3	43.9	26	41	38
Kanchanaburi	116.5	114.4	115.5	92.1	95.9	94.0	41.2	52.0	46.5	41.1	37.8	40.2	22	33	32
Suphan Buri	101.7	100.7	101.2	87.4	91.1	89.2	47.5	61.6	54.3	45.6	37.2	42.0	21	36	33
Samut Songkhram	106.1	104.8	105.5	94.4	100.4	97.4	56.1	65.3	60.6	45.0	39.2	44.4	21	39	33
Phetchaburi	101.8	100.7	101.3	103.2	107.0	105.0	62.0	75.3	68.5	43.9	40.9	46.0	21	37	36
Prachuap Khiri Khan	116.4	114.8	115.6	93.3	97.2	95.2	47.7	57.9	52.6	45.0	39.5	40.9	24	33	28
<b>Northeastern Region</b>	<b>98.3</b>	<b>97.7</b>	<b>98.0</b>	<b>92.6</b>	<b>94.9</b>	<b>93.7</b>	<b>51.3</b>	<b>63.3</b>	<b>57.1</b>	<b>39.5</b>	<b>34.7</b>	<b>36.1</b>	<b>21</b>	<b>34</b>	<b>35</b>
Nakhon Ratchasima	101.1	100.1	100.6	94.1	95.9	95.0	53.4	66.3	59.7	37.7	33.8	37.8	22	35	37
Buri Ram	98.9	97.3	98.1	90.7	94.6	92.6	45.2	56.1	50.5	39.2	34.0	36.8	23	34	35
Surin	98.7	97.4	98.1	92.8	95.9	94.3	41.9	57.6	49.6	37.6	35.9	38.5	23	34	33
Si Sa Ket	99.3	98.0	98.7	92.7	96.6	94.6	53.4	66.5	59.8	37.4	34.6	36.1	22	36	38
Ubon Ratchathani	97.8	97.9	97.9	92.1	94.6	93.3	45.5	59.4	52.3	38.2	34.2	35.2	22	34	37
Yasothon	97.4	96.8	97.1	91.4	93.9	92.6	62.3	72.8	67.4	38.1	35.7	35.7	18	31	34
Chaiyaphum	94.5	94.2	94.4	89.4	90.4	89.9	40.2	54.2	47.0	37.1	31.9	34.2	18	34	35
Amnat Charoen	97.3	97.0	97.2	100.3	98.3	99.3	55.9	70.4	62.8	40.0	35.7	36.1	20	37	39
Nong Bua Lam Phu	97.7	96.6	97.2	84.1	88.5	86.3	39.5	52.0	45.5	36.6	32.5	32.8	21	34	39
Khon Kaen	101.3	101.4	101.3	99.2	98.2	98.7	69.3	78.9	74.0	42.0	34.2	37.2	21	34	36
Udon Thani	98.1	98.0	98.1	89.5	91.9	90.7	52.2	63.4	57.6	41.0	35.8	38.4	22	35	33
Loei	98.7	97.4	98.1	101.7	99.0	100.4	53.1	62.9	57.9	43.5	36.3	35.7	17	31	33
Nong Khai	96.8	96.6	96.7	90.6	91.8	91.2	49.8	58.0	53.8	38.2	34.2	36.2	22	35	34
Maha Sarakham	96.3	96.7	96.5	95.5	95.8	95.7	55.6	66.3	60.8	43.7	35.9	37.6	21	35	37
Roi Et	95.8	96.1	96.0	87.7	93.2	90.4	50.6	61.8	56.0	39.8	33.9	36.2	21	33	33
Kalasin	98.3	97.6	97.9	92.7	95.7	94.2	57.7	70.6	64.0	40.8	34.5	33.7	20	32	35
Sakon Nakhon	97.5	96.6	97.1	92.8	95.7	94.2	51.3	63.1	57.1	38.4	34.1	37.2	23	34	36
Nakhon Phanom	96.8	96.2	96.5	90.9	93.0	91.9	38.2	49.1	43.6	45.5	35.8	34.7	20	33	31
Mukdahan	99.1	97.5	98.3	93.1	100.8	96.9	56.8	69.1	62.8	35.7	36.2	35.5	20	32	32
<b>Northern Region</b>	<b>105.8</b>	<b>105.0</b>	<b>105.4</b>	<b>90.4</b>	<b>91.6</b>	<b>91.0</b>	<b>57.1</b>	<b>64.2</b>	<b>60.5</b>	<b>42.2</b>	<b>37.4</b>	<b>40.6</b>	<b>20</b>	<b>34</b>	<b>35</b>
Chiang Mai	119.1	119.6	119.4	105.0	101.8	103.4	71.8	77.4	74.6	40.0	37.6	43.8	22	37	39
Lamphun	108.3	108.0	108.1	102.5	98.6	100.6	70.7	75.4	73.0	42.0	37.2	42.2	16	31	29
Lampang	101.6	101.0	101.3	99.6	100.3	100.0	80.4	84.8	82.5	44.3	34.3	43.8	20	38	33
Uttaradit	97.2	96.0	96.6	94.7	95.6	95.1	71.9	78.7	75.2	39.4	37.4	41.6	17	34	38
Phrae	101.6	101.4	101.5	83.9	95.0	89.3	62.8	76.8	69.6	44.6	40.0	44.5	18	32	34
Nan	105.2	103.3	104.3	94.2	94.9	94.5	72.3	75.9	74.1	44.5	40.2	43.6	17	31	36
Phayao	101.5	100.5	101.0	98.4	99.1	98.8	69.2	78.4	73.6	48.2	39.7	41.9	20	33	33
Chiang Rai	118.5	118.9	118.7	99.1	103.1	101.0	60.3	67.3	63.8	42.4	38.0	42.3	21	35	36
Mae Hong Son	122.3	118.9	120.7	75.4	86.6	80.8	39.5	46.2	42.8	36.7	35.4	37.4	16	28	32
Nakhon Sawan	101.5	100.1	100.8	93.3	93.5	93.4	51.0	61.0	55.9	42.6	37.7	39.5	21	36	35
Uthai Thani	99.7	99.3	99.5	94.2	96.2	95.2	49.7	55.6	52.6	48.2	39.0	39.9	16	31	31
Kamphaeng Phet	100.7	99.3	100.1	82.0	87.1	84.5	40.3	48.8	44.4	43.4	37.0	38.6	21	32	30
Tak	113.3	111.2	112.3	77.2	79.8	78.5	43.5	48.1	45.7	39.8	37.9	41.0	24	34	35
Sukhothai	94.7	93.6	94.1	97.4	98.1	97.8	67.4	91.8	79.2	38.9	34.5	38.8	18	35	36
Phitsanulok	100.8	99.0	99.9	96.1	95.9	96.0	58.0	66.0	61.9	38.8	37.6	37.0	22	33	34
Phichit	96.9	95.8	96.4	90.5	91.7	91.1	44.8	53.7	49.1	43.5	36.8	37.6	19	32	31
Phetchabun	101.1	99.7	100.4	46.6	44.2	45.4	17.1	13.1	15.2	39.6	35.9	36.6	21	28	13
<b>Southern Region</b>	<b>106.7</b>	<b>104.6</b>	<b>105.7</b>	<b>87.8</b>	<b>95.2</b>	<b>91.4</b>	<b>50.5</b>								

Table AII.3 Employment

Location	Population 2005			Population aged 15+ 2005			Employment 2005	
	Male	Female	Total	Male	Female	Total	No. of current labour force	
	number	number	number	number	number	number	Male	Female
	1	2	3	4	5	6	7	8
<b>Kingdom</b>	<b>31,865,483</b>	<b>33,018,562</b>	<b>64,884,045</b>	<b>24,262,092</b>	<b>25,742,188</b>	<b>50,004,280</b>	<b>19,760,126</b>	<b>17,038,069</b>
<b>Bangkok</b>	<b>3,208,035</b>	<b>3,592,808</b>	<b>6,800,843</b>	<b>2,607,378</b>	<b>3,026,315</b>	<b>5,633,692</b>	<b>2,055,100</b>	<b>1,894,315</b>
<b>Bangkok Vicinity</b>	<b>2,210,138</b>	<b>2,377,221</b>	<b>4,587,358</b>	<b>1,789,873</b>	<b>1,969,403</b>	<b>3,759,275</b>	<b>1,496,829</b>	<b>1,373,712</b>
Nakhon Pathom	468,229	479,032	947,261	365,509	384,168	749,677	310,662	279,762
Nonthaburi	538,898	622,458	1,161,356	442,419	524,093	966,512	357,907	342,313
Pathum Thani	351,311	381,787	733,098	280,624	310,100	590,724	227,569	202,253
Samut Prakan	586,545	648,208	1,234,753	486,704	547,036	1,033,740	416,751	392,625
Samut Sakhon	265,155	245,736	510,891	214,617	204,006	418,623	183,939	156,760
<b>Central Region</b>	<b>1,489,777</b>	<b>1,559,933</b>	<b>3,049,709</b>	<b>1,164,358</b>	<b>1,249,752</b>	<b>2,414,109</b>	<b>912,265</b>	<b>801,664</b>
Chai Nat	174,140	185,403	359,543	136,144	148,703	284,847	105,914	100,739
Phra Nakhon Si Ayutthaya	343,584	388,239	731,823	268,640	311,273	579,913	201,309	181,373
Lop Buri	374,792	375,887	750,679	292,866	300,821	593,687	233,730	199,489
Saraburi	331,760	349,692	681,452	279,866	259,183	539,049	210,136	184,620
Sing Buri	124,564	117,603	242,167	97,412	94,366	191,778	77,840	59,007
Ang Thong	140,937	143,109	284,046	110,113	114,723	224,836	83,336	76,436
<b>Eastern Region</b>	<b>2,190,718</b>	<b>2,214,674</b>	<b>4,405,393</b>	<b>1,703,343</b>	<b>1,749,098</b>	<b>3,452,440</b>	<b>1,412,417</b>	<b>1,155,769</b>
Chanthaburi	269,169	255,328	524,497	211,452	203,417	414,869	179,540	147,678
Chachoengsao	325,638	329,856	655,494	251,854	260,610	512,464	204,231	163,547
Chon Buri	513,935	585,079	1,099,014	412,855	475,954	888,809	340,069	302,892
Trat	131,248	113,661	244,909	101,794	87,955	189,749	86,599	57,874
Nakhon Nayok	126,402	110,525	236,927	97,297	87,402	184,699	77,818	54,635
Prachin Buri	209,914	207,530	417,444	160,888	162,422	323,310	132,308	116,036
Rayong	253,446	274,285	527,731	200,169	217,336	417,505	171,861	142,916
Sa Kaeo	360,967	338,411	699,378	267,034	254,002	521,036	219,991	170,191
<b>Western Region</b>	<b>1,759,758</b>	<b>1,845,949</b>	<b>3,605,707</b>	<b>1,354,036</b>	<b>1,462,603</b>	<b>2,816,638</b>	<b>1,113,313</b>	<b>978,825</b>
Ratchaburi	400,922	448,433	849,355	308,742	355,610	664,352	257,845	247,802
Kanchanaburi	439,803	396,897	836,700	337,622	313,536	651,158	281,194	214,144
Suphan Buri	397,024	438,332	835,356	305,815	347,766	653,581	249,996	224,555
Samut Songkhram	85,323	96,512	181,835	65,846	76,705	142,551	52,204	49,221
Phetchaburi	205,264	233,561	438,825	158,001	185,237	343,238	126,152	122,315
Prachuap Khiri Khan	231,422	232,215	463,637	178,010	183,749	361,759	145,923	120,789
<b>Northeastern Region</b>	<b>10,891,255</b>	<b>11,019,070</b>	<b>21,910,325</b>	<b>8,008,553</b>	<b>8,270,872</b>	<b>16,279,425</b>	<b>6,526,760</b>	<b>5,456,757</b>
Nakhon Ratchasima	1,253,458	1,414,669	2,668,127	934,382	1,082,598	2,016,980	748,294	693,212
Buri Ram	742,980	853,079	1,596,059	539,859	629,849	1,169,708	453,225	405,260
Surin	750,219	759,848	1,510,067	535,950	554,610	1,090,560	420,433	357,019
Si Sa Ket	770,719	745,836	1,516,555	551,733	547,401	1,099,134	493,388	420,071
Ubon Ratchathani	832,227	894,475	1,726,702	598,791	655,558	1,254,349	499,504	414,617
Yasothon	273,707	260,665	534,372	199,332	203,039	402,371	169,334	146,436
Chalyaphum	573,702	530,886	1,104,588	428,698	404,879	833,577	356,645	270,852
Amnat Charoen	267,900	264,764	532,664	195,226	191,534	386,760	160,742	136,802
Nong Bua Lam Phu	363,088	325,253	688,341	264,225	250,957	515,182	224,563	172,960
Khon Kaen	827,946	827,501	1,655,447	628,004	635,938	1,263,978	477,871	382,950
Udon Thani	790,110	666,182	1,456,292	581,189	494,775	1,075,964	470,029	324,145
Loei	322,743	325,662	648,405	246,856	251,588	498,444	197,709	155,360
Nong Khai	517,838	491,224	1,009,062	381,021	365,315	746,336	303,764	223,894
Maha Sarakham	437,317	444,080	881,397	327,800	342,541	670,341	272,268	231,572
Roi Et	673,127	704,861	1,377,988	494,182	530,153	1,024,335	405,278	381,268
Kalasin	477,433	509,525	986,958	354,778	385,029	739,778	279,172	261,971
Sakon Nakhon	545,267	528,074	1,073,341	401,778	394,717	796,495	313,779	246,826
Nakhon Phanom	291,403	284,418	575,821	213,935	211,528	425,463	170,609	138,244
Mukdahan	180,072	188,070	368,142	130,808	138,864	269,672	110,151	93,298
<b>Northern Region</b>	<b>5,770,250</b>	<b>5,958,845</b>	<b>11,729,095</b>	<b>4,464,127</b>	<b>4,691,692</b>	<b>9,155,819</b>	<b>3,609,239</b>	<b>3,143,774</b>
Chiang Mai	775,837	825,399	1,601,236	615,327	665,504	1,280,831	485,740	469,464
Lamphun	186,156	184,005	370,161	150,338	152,552	302,890	124,642	113,964
Lampang	380,376	406,971	787,347	301,707	327,220	628,927	238,425	220,716
Uttaradit	222,419	235,739	458,158	174,957	189,766	364,723	140,825	116,634
Phrae	221,010	226,996	448,006	175,931	179,831	355,762	141,256	122,488
Nan	246,621	221,264	467,885	190,549	171,805	362,354	150,656	115,023
Phayao	251,647	253,428	505,075	197,547	201,177	398,724	155,513	131,133
Chiang Rai	639,589	662,067	1,301,656	494,939	517,613	1,012,552	401,524	343,570
Mae Hong Son	136,962	112,063	249,025	95,088	72,610	167,698	80,926	54,789
Nakhon Sawan	466,921	515,069	981,990	363,363	415,601	778,964	298,497	276,651
Uthai Thani	147,681	154,807	302,488	113,168	121,755	234,923	92,865	81,216
Kamphaeng Phet	390,866	425,391	816,257	291,625	324,587	616,212	244,495	216,035
Tak	235,150	248,044	483,194	170,213	179,993	350,206	142,725	127,331
Sukhothai	266,630	325,247	591,877	205,943	266,933	472,876	171,154	186,613
Phitsanulok	409,304	379,111	788,415	319,034	291,561	610,595	256,956	189,029
Phichit	256,789	273,052	529,841	196,521	217,358	413,879	155,627	136,485
Phetchabun	536,293	510,193	1,046,486	407,878	395,827	803,705	327,413	242,633
<b>Southern Region</b>	<b>4,345,554</b>	<b>4,450,061</b>	<b>8,795,615</b>	<b>3,170,425</b>	<b>3,322,455</b>	<b>6,492,881</b>	<b>2,634,204</b>	<b>2,233,253</b>
Nakhon Si Thammarat	760,117	872,447	1,632,564	559,437	656,143	1,215,580	467,496	472,961
Krabi	194,503	208,032	402,535	139,652	149,735	289,387	118,289	100,060
Phang-nga	119,982	116,615	236,597	88,912	88,394	177,306	74,675	57,032
Phuket	140,087	152,876	292,963	108,064	120,794	228,858	90,297	72,180
Surat Thani	478,619	482,639	961,258	360,357	369,393	729,750	304,558	244,418
Ranong	89,775	93,428	183,203	67,432	70,380	137,812	58,881	40,858
Chumphon	245,578	241,489	487,067	186,496	187,674	374,170	156,135	123,903
Songkhla	663,139	655,106	1,318,245	494,592	503,058	997,650	398,461	336,550
Satun	140,410	139,986	280,396	100,529	101,660	202,189	83,028	61,282
Trang	323,604	318,759	642,363	234,222	241,710	475,932	200,905	175,186
Phatthalung	251,856	263,409	515,265	186,142	200,085	386,227	156,033	150,115
Pattani	305,371	257,318	562,689	211,321	178,664	389,985	170,771	109,153
Yala	254,706	236,069	490,775	175,567	168,782	344,349	141,708	104,709
Narathiwat	377,808	411,889	789,697	257,703	285,984	543,687	212,967	184,847

See Annex III for data sources

**Table AII.3 Employment (continued)**

Location	Employment 2005										
	No. of employed persons			No. of unemployed persons			Un-employment rate	No. of underemployed persons			Under-employment rate
	Male	Female	Total	Male	Female	Total	(%)	Male	Female	Total	(%)
	9	10	11	12	13	14	15	16	17	18	19
<b>Kingdom</b>	<b>19,470,270</b>	<b>16,832,090</b>	<b>36,302,360</b>	<b>289,856</b>	<b>205,979</b>	<b>495,835</b>	<b>1.3</b>	<b>342,545</b>	<b>260,240</b>	<b>602,785</b>	<b>1.7</b>
<b>Bangkok</b>	<b>2,017,185</b>	<b>1,858,556</b>	<b>3,875,741</b>	<b>37,915</b>	<b>35,760</b>	<b>73,675</b>	<b>1.9</b>	<b>919</b>	<b>1,559</b>	<b>2,478</b>	<b>0.1</b>
<b>Bangkok Vicinity</b>	<b>1,473,809</b>	<b>1,362,582</b>	<b>2,836,391</b>	<b>23,020</b>	<b>11,130</b>	<b>34,150</b>	<b>1.2</b>	<b>1,305</b>	<b>2,829</b>	<b>4,135</b>	<b>0.1</b>
Nakhon Pathom	308,544	278,968	587,512	2,118	794	2,912	0.5	0	2,203	2,203	0.4
Nonthaburi	352,301	340,385	692,686	5,606	1,927	7,533	1.1	0	0	0	0.0
Pathum Thani	220,283	199,502	419,785	7,286	2,751	10,038	2.3	743	0	743	0.2
Samut Prakan	410,900	388,684	799,583	5,851	3,941	9,793	1.2	459	401	860	0.1
Samut Sakhon	181,781	155,044	336,825	2,158	1,716	3,874	1.1	102	225	328	0.1
<b>Central Region</b>	<b>887,564</b>	<b>791,006</b>	<b>1,678,570</b>	<b>24,701</b>	<b>10,658</b>	<b>35,359</b>	<b>2.1</b>	<b>20,328</b>	<b>7,605</b>	<b>27,933</b>	<b>1.7</b>
Chai Nat	103,153	98,760	201,913	2,761	1,979	4,740	2.3	5,329	1,353	6,683	3.3
Phra Nakhon Si Ayutthaya	195,494	179,755	375,249	5,815	1,618	7,433	1.9	169	184	353	0.1
Lop Buri	227,738	197,306	425,045	5,991	2,182	8,174	1.9	11,551	4,169	15,720	3.7
Saraburi	206,022	181,174	387,196	4,114	3,446	7,560	1.9	350	630	980	0.3
Sing Buri	74,364	58,836	133,200	3,476	171	3,647	2.7	1,294	319	1,613	1.2
Ang Thong	80,793	75,174	155,967	2,543	1,262	3,805	2.4	1,634	949	2,584	1.7
<b>Eastern Region</b>	<b>1,387,108</b>	<b>1,139,794</b>	<b>2,526,902</b>	<b>25,309</b>	<b>15,975</b>	<b>41,284</b>	<b>1.6</b>	<b>15,965</b>	<b>11,016</b>	<b>26,981</b>	<b>1.1</b>
Chanthaburi	177,179	147,125	324,304	2,361	553	2,914	0.9	2,621	1,043	3,664	1.1
Chachoengsao	196,586	159,653	356,239	7,646	3,895	11,540	3.1	4,246	2,464	6,710	1.9
Chon Buri	336,615	297,895	634,510	3,455	4,997	8,451	1.3	0	300	300	0.0
Trat	84,964	56,553	141,516	1,635	1,322	2,957	2.0	2,873	1,322	4,195	3.0
Nakhon Nayok	77,732	54,293	132,025	86	342	428	0.3	837	283	1,119	0.8
Prachin Buri	131,025	114,787	245,812	1,282	1,249	2,531	1.0	844	376	1,220	0.5
Rayong	169,663	139,524	309,187	2,198	3,393	5,590	1.8	71	480	550	0.2
Sa Kaeo	213,344	169,964	383,309	6,647	227	6,874	1.8	4,473	4,749	9,223	2.4
<b>Western Region</b>	<b>1,099,188</b>	<b>967,668</b>	<b>2,066,856</b>	<b>14,125</b>	<b>11,157</b>	<b>25,281</b>	<b>1.2</b>	<b>19,973</b>	<b>17,620</b>	<b>37,594</b>	<b>1.8</b>
Ratchaburi	254,728	246,184	500,913	3,117	1,617	4,734	0.9	3,668	4,522	8,190	1.6
Kanchanaburi	279,165	211,059	490,224	2,029	3,085	5,114	1.0	8,760	9,889	18,650	3.8
Suphan Buri	244,764	220,098	464,863	5,231	4,456	9,687	2.0	3,338	448	3,787	0.8
Samut Songkhram	51,947	49,045	100,992	257	176	433	0.4	0	0	0	0.0
Phetchaburi	123,109	120,978	244,087	3,043	1,336	4,380	1.8	239	397	636	0.3
Prachuap Khiri Khan	145,475	120,303	265,778	448	486	934	0.3	3,968	2,363	6,332	2.4
<b>Northeastern Region</b>	<b>6,443,364</b>	<b>5,405,860</b>	<b>11,849,224</b>	<b>83,396</b>	<b>50,896</b>	<b>134,293</b>	<b>1.1</b>	<b>129,841</b>	<b>103,814</b>	<b>233,656</b>	<b>2.0</b>
Nakhon Ratchasima	740,969	685,537	1,426,506	7,324	7,675	14,999	1.0	8,237	13,701	21,939	1.5
Buri Ram	446,294	401,295	847,589	6,930	3,965	10,895	1.3	14,237	9,697	23,934	2.8
Surin	411,088	352,537	763,625	9,344	4,482	13,827	1.8	961	2,176	3,137	0.4
Si Sa Ket	490,698	415,323	906,021	2,690	4,748	7,438	0.8	39,536	31,121	70,657	7.8
Ubon Ratchathani	496,158	412,640	908,798	3,346	1,977	5,324	0.6	3,765	0	3,765	0.4
Yasothon	169,285	146,404	315,688	50	33	82	0.0	1,819	662	2,481	0.8
Chaiyaphum	354,450	269,870	624,319	2,195	983	3,178	0.5	4,686	5,155	9,841	1.6
Amnat Charoen	156,193	131,902	288,095	4,550	4,899	9,449	3.2	2,006	2,745	4,752	1.6
Nong Bua Lam Phu	221,894	169,945	391,838	2,670	3,015	5,685	1.4	1,486	1,422	2,909	0.7
Khon Kaen	456,171	378,453	834,624	21,700	4,496	26,197	3.0	17,227	3,348	20,575	2.5
Udon Thani	468,767	321,477	790,243	1,263	2,669	3,931	0.5	1,833	5,376	7,209	0.9
Loei	197,526	155,360	352,886	183	0	183	0.1	3,870	2,270	6,140	1.7
Nong Khai	298,005	223,088	521,093	5,760	806	6,566	1.2	5,711	1,305	7,016	1.3
Maha Sarakham	266,588	231,353	497,942	5,680	219	5,899	1.2	6,309	2,902	9,211	1.8
Roi Et	404,829	380,860	785,689	450	408	858	0.1	6,837	11,507	18,344	2.3
Kalasin	278,921	261,206	540,127	250	765	1,016	0.2	3,991	2,983	6,973	1.3
Sakon Nakhon	311,493	239,627	551,121	2,286	7,198	9,484	1.7	528	3,231	3,759	0.7
Nakhon Phanom	164,935	136,511	301,447	5,673	1,733	7,406	2.4	247	0	247	0.1
Mukdahan	109,099	92,473	201,572	1,051	825	1,876	0.9	6,556	4,211	10,767	5.3
<b>Northern Region</b>	<b>3,563,603</b>	<b>3,106,879</b>	<b>6,670,482</b>	<b>45,635</b>	<b>36,895</b>	<b>82,530</b>	<b>1.2</b>	<b>74,957</b>	<b>57,596</b>	<b>132,553</b>	<b>2.0</b>
Chiang Mai	479,726	457,286	937,013	6,014	12,177	18,191	1.9	13,400	8,218	21,619	2.3
Lamphun	122,986	113,279	236,265	1,656	685	2,341	1.0	1,703	2,998	4,701	2.0
Lampang	235,720	216,655	452,375	2,705	4,061	6,767	1.5	2,820	5,338	8,158	1.8
Uttaradit	138,714	115,435	254,149	2,111	1,200	3,310	1.3	1,169	692	1,860	0.7
Phrae	141,057	121,781	262,838	199	707	907	0.3	4,692	2,703	7,395	2.8
Nan	147,759	114,994	262,754	2,896	29	2,926	1.1	45	0	45	0.0
Phayao	154,740	129,876	284,615	773	1,257	2,030	0.7	557	789	1,346	0.5
Chiang Rai	396,139	340,651	736,790	5,385	2,919	8,304	1.1	15,808	11,265	27,073	3.7
Mae Hong Son	80,431	54,490	134,921	494	299	794	0.6	405	278	683	0.5
Nakhon Sawan	297,657	276,651	574,308	840	0	840	0.1	4,517	2,118	6,635	1.2
Uthai Thani	92,301	80,795	173,096	564	420	985	0.6	209	238	447	0.3
Kamphaeng Phet	238,799	213,790	452,589	5,696	2,244	7,940	1.7	9,059	8,320	17,379	3.8
Tak	140,219	126,380	266,599	2,506	952	3,458	1.3	3,788	4,241	8,029	3.0
Sukhothai	168,011	185,204	353,214	3,143	1,409	4,552	1.3	3,229	1,609	4,838	1.4
Phitsanulok	254,711	187,067	441,779	2,245	1,961	4,206	0.9	2,288	91	2,379	0.5
Phichit	151,709	134,490	286,200	3,918	1,994	5,912	2.0	1,631	618	2,249	0.8
Phetchabun	322,924	238,054	560,978	4,488	4,579	9,068	1.6	9,638	8,080	17,718	3.2
<b>Southern Region</b>	<b>2,598,448</b>	<b>2,199,745</b>	<b>4,798,194</b>	<b>35,756</b>	<b>33,507</b>	<b>69,263</b>	<b>1.4</b>	<b>79,257</b>	<b>58,199</b>	<b>137,456</b>	<b>2.9</b>
Nakhon Si Thammarat	460,028	463,639	923,668	7,468	9,321	16,789	1.8	19,789	18,433	38,222	4.1
Krabi	117,321	98,382	215,702	968	1,678	2,646	1.2	10,199	8,348	18,548	8.6
Phang-nga	74,340	56,166	130,506	335	866	1,201	0.9	13,264	9,463	22,726	17.4
Phuket	89,251	71,111	160,362	1,046	1,070	2,115	1.3	1,624	453	2,077	1.3
Surat Thani	303,245	241,985	545,230	1,313	2,433	3,745	0.7	4,048	2,834	6,882	1.3
Ranong	58,624	40,297	98,921	257	561	818	0.8	281	306	586	0.6
Chumphon	155,211	122,372	277,584	924	1,530	2,454	0.9	1,288	681	1,969	0.7
Songkhla	386,860	330,401	717,262	11,601	6,148	17,749	2.4	8,602	4,341	12,943	1.8
Satun	82,491	60,564	143,055	537	718	1,255	0.9	3,392	2,896	6,288	4.4
Trang	200,226	173,565	373,790	679	1,622	2,301	0.6	1,984	1,547	3,532	0.9
Phatthalung	155,419	147,436	302,855	614	2,679	3,293	1.1	4,675	4,865	9,540	3.2
Pattani	167,306	106,713	274,018	3,465	2,441	5,905	2.1	4,575	1,842	6,417	2.3
Yala	140,818	104,196	245,014	890	513	1,403	0.6	2,844	1,336	4,180	1.7
Narathiwat	207,308	182,919	390,227	5,659	1,929	7,587	1.9	2,691	854	3,545	0.9

Table AII.3 Employment (continued)

Location	Employed people having social security 2005		Occupational injuries 2005		
			Workers covered by Workers' Compensation Fund	Occupational injuries	Occupational injuries
	(number)	(%)	(number)	(number)	per 1,000 workers covered by WCF
	20	21	22	23	24
<b>Kingdom</b>	<b>8,467,336</b>	<b>23.0</b>	<b>7,384,703</b>	<b>214,235</b>	<b>29</b>
<b>Bangkok</b>	<b>2,953,563</b>	<b>74.8</b>	<b>2,677,665</b>	<b>58,878</b>	<b>22</b>
<b>Bangkok Vicinity</b>	<b>1,848,964</b>	<b>64.4</b>	<b>1,698,984</b>	<b>76,253</b>	<b>45</b>
Nakhon Pathom	730,780	24.3	181,402	5,746	32
Nonthaburi	206,854	29.5	177,302	4,431	25
Pathum Thani	372,881	86.8	319,801	8,083	25
Samut Prakan	196,585	123.8	694,358	42,891	62
Samut Sakhon	341,864	100.3	326,121	15,102	46
<b>Central Region</b>	<b>556,098</b>	<b>32.4</b>	<b>490,813</b>	<b>10,113</b>	<b>21</b>
Chai Nat	14,122	6.8	10,714	248	23
Phra Nakhon Si Ayutthaya	304,870	79.7	271,253	4,822	18
Lop Buri	62,222	14.4	52,049	810	16
Saraburi	145,878	37.0	132,543	3,649	28
Sing Buri	16,917	12.4	14,745	430	29
Ang Thong	12,089	7.6	9,509	154	16
Eastern Region	1,032,394	40.2	901,707	29,189	32
Chanthaburi	31,562	9.6	23,668	606	26
Chachoengsao	155,380	42.2	139,807	5,638	40
Chon Buri	455,836	70.9	403,945	14,292	35
Trat	10,983	7.6	8,458	153	18
Nakhon Nayok	13,807	10.4	11,725	329	28
Prachin Buri	102,046	41.1	93,096	1,846	20
Rayong	247,950	78.8	210,436	6,140	29
Sa Kaeo	14,830	3.8	10,572	185	17
<b>Western Region</b>	<b>269,481</b>	<b>12.9</b>	<b>227,631</b>	<b>6,921</b>	<b>30</b>
Ratchaburi	88,259	17.5	76,413	2,380	31
Kanchanaburi	43,044	8.7	35,372	877	25
Suphan Buri	35,825	7.5	28,627	896	31
Samut Songkhram	13,471	13.3	11,252	438	39
Phetchaburi	38,203	15.4	32,123	1,212	38
Prachuap Khiri Khan	50,679	19.0	43,844	1,118	25
<b>Northeastern Region</b>	<b>629,278</b>	<b>5.3</b>	<b>455,286</b>	<b>9,146</b>	<b>20</b>
Nakhon Ratchasima	198,053	13.7	164,829	4,747	29
Buri Ram	28,062	3.3	18,636	181	10
Surin	21,452	2.8	12,738	265	21
Si Sa Ket	16,343	1.8	8,294	93	11
Ubon Ratchathani	46,859	5.1	30,938	601	19
Yasothon	9,850	3.1	6,332	41	6
Chaiyaphum	23,414	3.7	15,463	133	9
Amnat Charoen	5,263	1.8	3,018	21	7
Nong Bua Lam Phu	6,899	1.7	3,703	29	8
Khon Kaen	98,981	11.5	77,467	1,049	14
Udon Thani	46,714	5.9	34,307	907	26
Loei	11,784	3.3	7,262	57	8
Nong Khai	15,369	2.9	9,207	185	20
Maha Sarakham	19,423	3.9	12,305	66	5
Roi Et	27,079	3.4	18,867	380	20
Kalasin	16,508	3.1	10,732	93	9
Sakon Nakhon	19,344	3.5	11,000	196	18
Nakhon Phanom	9,035	2.9	4,571	25	5
Mukdahan	8,846	4.3	5,617	77	14
<b>Northern Region</b>	<b>603,897</b>	<b>8.9</b>	<b>456,611</b>	<b>10,852</b>	<b>24</b>
Chiang Mai	177,087	18.5	133,451	3,405	26
Lamphun	75,522	31.7	67,314	902	13
Lampang	50,867	11.1	43,753	1,055	24
Uttaradit	14,549	5.7	9,671	244	25
Phrae	17,694	6.7	12,000	323	27
Nan	11,496	4.3	6,757	69	10
Phayao	14,434	5.0	9,362	130	14
Chiang Rai	43,644	5.9	29,198	427	15
Mae Hong Son	3,534	2.6	2,110	8	4
Nakhon Sawan	49,720	8.6	39,566	1,613	41
Uthai Thani	8,740	5.0	6,172	149	24
Kamphaeng Phet	18,301	4.0	12,237	328	27
Tak	16,322	6.0	11,096	192	17
Sukhothai	14,119	3.9	10,814	236	22
Phitsanulok	46,446	10.4	33,576	1,037	31
Phichit	17,571	6.0	11,930	307	26
Phetchabun	23,321	4.1	17,604	427	24
<b>Southern Region</b>	<b>573,661</b>	<b>11.8</b>	<b>476,006</b>	<b>12,883</b>	<b>27</b>
Nakhon Si Thammarat	48,887	5.2	37,408	906	24
Krabi	27,327	12.5	24,275	521	21
Phang-nga	11,626	8.8	7,177	622	87
Phuket	92,698	57.1	83,616	2,169	26
Surat Thani	79,424	14.5	65,414	1,524	23
Ranong	8,297	8.3	6,503	62	10
Chumphon	24,366	8.7	18,819	415	22
Songkhla	169,882	23.1	147,875	4,030	27
Satun	8,746	6.1	6,379	145	23
Trang	36,690	9.8	31,277	1,187	38
Phatthalung	11,292	3.7	7,450	131	18
Pattani	21,286	7.6	16,630	372	22
Yala	18,917	7.7	14,296	667	47
Narathiwat	14,223	3.6	8,887	132	15

See Annex III for data sources



Table AII.4 Income

Location	Household income 2004				Household income change 2002-2004	Household expenditure		Household expenditure change 2002-2004	Household debt		Poverty 2004		
	Household income 2002	Male headed	Female headed	Household income		Household expenditure 2002	Household expenditure 2004		households with debt 2004	Average household debt	Poverty incidence	Number of poor	Poverty line
	(Baht/month)	(Baht/month)	(Baht/month)	(Baht/month)	(%)	(Baht/month)	(Baht/month)	(%)	(% of households)	(Bath)	(%)	(in 1,000)	(Baht/person/month)
	1	2	3	4	5	6	7	8	9	10	11	12	13
<b>Kingdom</b>	<b>13,508</b>	<b>15,539</b>	<b>12,987</b>	<b>14,778</b>	<b>9.40</b>	<b>9,601</b>	<b>10,885</b>	<b>13.38</b>	<b>66.4</b>	<b>157,439</b>	<b>11.25</b>	<b>7,079.0</b>	<b>1,242</b>
<b>Bangkok</b>	<b>29,425</b>	<b>31,102</b>	<b>26,314</b>	<b>29,696</b>	<b>0.92</b>	<b>18,995</b>	<b>19,841</b>	<b>4.45</b>	<b>45.8</b>	<b>351,000</b>	<b>1.64</b>	<b>108.4</b>	<b>1,853</b>
<b>Bangkok Vicinity</b>	<b>21,490</b>	<b>21,847</b>	<b>19,846</b>	<b>21,215</b>	<b>-1.28</b>	<b>14,897</b>	<b>15,268</b>	<b>2.48</b>	<b>52.4</b>	<b>262,946</b>	<b>0.88</b>	<b>37.8</b>	<b>1,372</b>
Nakhon Pathom	18,374	21,083	19,504	20,478	11.45	13,577	16,548	21.89	65.2	268,017	2.36	20.2	1,321
Nonthaburi	28,907	27,516	24,765	26,579	-8.05	19,707	17,970	-8.81	60.3	336,798	0.57	5.6	1,368
Pathum Thani	22,653	22,437	19,484	21,477	-5.19	15,916	15,543	-2.34	55.4	261,726	0.00	0.0	1,308
Samut Prakan	19,594	20,639	17,677	19,917	1.65	12,927	13,384	3.53	43.6	180,703	0.31	3.4	1,464
Samut Sakhon	16,360	15,592	14,486	15,281	-6.59	11,461	11,546	0.74	29.1	222,024	1.68	8.5	1,374
<b>Central Region</b>	<b>12,412</b>	<b>16,320</b>	<b>13,269</b>	<b>15,153</b>	<b>22.08</b>	<b>9,044</b>	<b>11,037</b>	<b>22.04</b>	<b>62.5</b>	<b>147,122</b>	<b>6.36</b>	<b>185.1</b>	<b>1,321</b>
Chai Nat	10,464	12,318	13,851	12,920	23.47	8,436	10,725	27.13	68.5	136,973	10.74	38.3	1,321
Phra Nakhon Si Ayutthaya	13,164	16,428	12,781	14,893	13.14	9,981	9,818	-1.63	39.7	124,457	3.50	25.0	1,362
Lop Buri	10,829	16,788	11,189	14,968	38.22	7,899	11,788	49.22	79.7	177,771	8.60	61.8	1,278
Saraburi	14,656	19,078	17,803	18,634	27.14	9,634	12,627	31.06	65.1	153,458	4.32	26.8	1,321
Sing Buri	14,150	16,642	11,224	14,611	3.26	10,574	11,355	7.39	64.5	156,030	10.49	24.3	1,344
Ang Thong	11,651	13,581	12,039	12,811	9.95	8,034	9,052	12.67	60.1	72,598	3.28	8.9	1,313
<b>Eastern Region</b>	<b>13,938</b>	<b>18,666</b>	<b>14,222</b>	<b>17,200</b>	<b>23.41</b>	<b>10,332</b>	<b>12,105</b>	<b>17.16</b>	<b>63.6</b>	<b>226,011</b>	<b>5.79</b>	<b>240.6</b>	<b>1,343</b>
Chanthaburi	15,771	16,471	13,434	15,503	-1.70	11,602	12,377	6.67	71.0	259,489	4.14	21.2	1,347
Chachoengsao	14,725	17,265	15,714	16,718	13.53	12,023	13,645	13.50	66.5	134,537	3.18	20.4	1,304
Chon Buri	16,679	23,611	18,497	22,240	33.34	12,567	14,310	13.87	46.4	440,115	1.30	14.0	1,422
Trat	13,719	14,474	12,814	13,961	1.76	8,887	9,514	7.05	59.8	145,418	12.45	29.2	1,315
Nakhon Nayok	10,106	14,274	11,339	12,971	28.35	8,425	10,957	30.05	72.9	138,358	10.67	26.2	1,277
Prachin Buri	12,691	16,616	12,433	14,964	17.92	9,889	11,962	20.96	71.2	120,982	7.61	31.4	1,272
Rayong	13,252	24,286	15,062	21,472	62.03	9,000	13,070	45.23	66.0	205,189	5.60	29.4	1,364
Sa Kaeo	9,893	11,117	10,090	10,753	8.69	6,113	6,575	7.55	75.2	86,415	13.75	68.8	1,297
<b>Western Region</b>	<b>13,823</b>	<b>16,500</b>	<b>12,475</b>	<b>14,962</b>	<b>8.25</b>	<b>9,255</b>	<b>11,195</b>	<b>20.96</b>	<b>64.3</b>	<b>145,614</b>	<b>8.28</b>	<b>293.8</b>	<b>1,309</b>
Ratchaburi	14,471	22,264	14,798	19,425	34.23	11,595	13,852	19.47	65.9	161,821	5.55	44.0	1,334
Kanchanaburi	15,176	12,713	10,366	11,944	-21.30	8,321	9,577	15.08	63.2	99,368	16.94	134.8	1,276
Suphan Buri	12,943	17,761	12,600	15,496	19.73	8,281	11,628	40.41	68.7	196,868	5.79	50.1	1,278
Samut Songkhram	13,673	13,082	11,732	12,500	-8.58	10,589	9,566	-9.66	44.5	52,877	4.86	10.3	1,324
Petchaburi	14,595	13,619	11,632	12,898	-11.62	8,687	9,498	9.34	68.9	119,161	5.17	22.5	1,342
Prachuap Khiri Khan	11,663	14,711	11,998	13,752	17.91	8,265	10,495	26.98	59.3	133,991	7.17	32.2	1,343
<b>Northeastern Region</b>	<b>9,049</b>	<b>10,399</b>	<b>8,707</b>	<b>9,933</b>	<b>9.77</b>	<b>6,741</b>	<b>7,634</b>	<b>13.25</b>	<b>78.7</b>	<b>105,816</b>	<b>17.16</b>	<b>3,650.8</b>	<b>1,078</b>
Nakhon Ratchasima	9,434	11,574	10,599	11,237	19.10	6,775	8,212	21.21	77.6	112,421	15.63	402.7	1,078
Buri Ram	7,691	8,566	8,118	8,436	9.69	5,847	6,947	18.81	83.7	104,697	21.69	327.7	1,065
Surin	6,485	7,960	7,351	7,777	19.91	5,392	6,195	14.86	82.7	105,908	33.97	458.6	1,057
Si Sa Ket	7,227	8,810	6,583	8,365	15.74	5,713	6,533	14.36	84.4	85,118	19.29	276.6	1,081
Ubon Ratchathani	12,062	11,864	9,275	11,333	-6.04	7,446	7,802	4.78	77.6	103,610	7.03	121.4	1,061
Yasothon	6,018	9,741	7,714	9,302	54.56	5,176	8,279	59.96	78.1	101,976	10.67	60.4	1,069
Chaiyaphum	8,248	9,351	8,159	8,981	8.89	6,380	6,455	1.17	79.0	99,183	22.57	251.7	1,077
Amnat Charoen	8,999	11,739	8,763	11,123	23.61	6,652	8,750	31.55	86.2	130,741	12.01	43.7	1,079
Nong Bua Lam Phu	6,943	8,472	7,338	8,198	18.07	5,270	6,354	20.56	79.3	126,854	29.46	145.2	1,074
Khon Kaen	11,295	13,826	8,553	12,734	12.74	6,942	9,454	36.19	78.2	125,749	9.03	159.5	1,108
Udon Thani	9,807	11,195	9,807	10,773	9.85	7,301	7,694	5.38	67.7	108,594	15.14	226.1	1,085
Loei	9,168	10,355	8,584	9,965	8.69	6,806	7,900	16.08	82.5	95,916	17.27	110.0	1,088
Nong Khai	10,680	12,502	8,514	11,218	5.03	7,963	9,048	13.62	73.8	122,390	10.78	98.4	1,089
Maha Sarakham	9,238	10,681	7,968	10,031	8.59	6,982	7,253	3.88	85.5	100,387	9.51	91.7	1,062
Roi Et	8,926	9,279	9,800	9,442	5.77	7,255	8,349	15.08	85.2	89,735	8.21	107.0	1,077
Kalasin	8,433	9,439	7,852	8,855	5.01	7,810	6,478	-17.06	75.0	87,317	15.36	147.9	1,102
Sakon Nakhon	9,989	8,911	8,537	8,823	-11.68	8,081	7,114	-11.97	70.7	107,266	30.16	322.6	1,064
Nakhon Phanom	7,202	8,479	7,331	8,080	12.18	6,290	7,754	23.28	72.8	117,548	32.27	224.5	1,069
Mukdahan	8,715	9,509	7,792	9,176	5.29	7,408	7,823	5.61	78.9	112,983	22.26	75.0	1,085
<b>Northern Region</b>	<b>9,287</b>	<b>11,273</b>	<b>9,362</b>	<b>10,690</b>	<b>15.11</b>	<b>6,777</b>	<b>8,232</b>	<b>21.47</b>	<b>68.2</b>	<b>139,182</b>	<b>16.24</b>	<b>1,907.4</b>	<b>1,131</b>
Chiang Mai	9,192	12,971	11,068	12,439	35.32	7,573	10,035	32.51	67.3	136,610	18.59	286.2	1,156
Lamphun	11,165	11,949	10,341	11,551	3.46	8,023	8,823	9.96	77.1	191,903	5.75	24.1	1,170
Lampang	9,738	10,591	10,414	10,539	8.23	6,006	7,594	26.44	61.8	115,921	16.54	129.8	1,152
Uttaradit	8,415	11,808	9,190	10,845	28.88	5,995	7,855	31.01	62.9	137,020	14.16	66.7	1,124
Phrae	9,778	11,687	8,428	10,982	12.31	6,602	7,867	19.16	68.0	133,673	5.01	24.8	1,142
Nan	7,903	11,310	7,955	10,454	32.27	6,274	9,146	45.78	75.1	162,455	19.33	91.8	1,133
Phayao	9,311	9,958	8,051	9,587	2.96	6,236	6,950	11.45	64.0	85,896	19.52	99.6	1,159
Chiang Rai	8,087	8,870	8,870	8,870	9.68	6,844	7,561	10.47	63.5	150,345	15.18	179.6	1,135
Mae Hong Son	6,681	8,534	8,663	8,564	28.19	5,379	6,810	26.60	70.0	83,112	33.95	84.9	1,090
Nakhon Sawan	9,419	10,253	9,289	9,877	4.85	6,765	7,028	3.89	66.4	123,640	17.06	183.2	1,151
Uthai Thani	6,407	10,274	8,211	9,631	50.33	5,157	7,052	36.74	74.7	113,770	21.62	66.4	1,099
Kamphaeng Phet	11,850	13,301	9,741	12,093	2.05	9,331	10,149	8.78	81.4	116,461	6.81	46.9	1,075
Tak	7,510	9,618	9,053	9,431	25.58	5,262	7,821	48.61	59.3	131,044	29.60	175.8	1,113
Sukhothai	8,201	12,274	8,970	11,267	37.39	5,490	7,495	36.52	66.9	110,258	14.53	87.0	1,140
Phitsanulok	10,467	13,400	11,358	12,612	20.49	7,643	9,867	29.09	65.7	232,869	11.96	94.9	1,134
Phichit	10,612	12,301	8,341	10,878	2.51	7,804	8,146	4.39	74.9	159,856	11.07	63.2	1,121
Petchabun	9,461	10,635	7,003	9,363	-1.03	5,406	6,906	27.74	71.7	130,176	20.39	202.3	1,084
<b>Southern Region</b>	<b>12,171</b>	<b>15,111</b>	<b>11,748</b>	<b>14,237</b>	<b>16.98</b>	<b>9,558</b>	<b>11,525</b>	<b>20.58</b>	<b>63.5</b>	<b>145,164</b>	<b>7.82</b>	<b>655.0</b>	<b>1,164</b>
Nakhon Si Thammarat													

**Table AII.5 Housing and living environment**

Location	Housing 2004				Living condition 2004						
	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 fuel gas or electric stove
	(% hholds)	(% hholds)	(number)	(number)	(% hholds)	(% hholds)	(% hholds)	(% hholds)	(% hholds)	(% hholds)	(% hholds)
	1	2	3	4	5	6	7	8	9	10	11
<b>Kingdom</b>	<b>76.3</b>	<b>97.9</b>	<b>1.3</b>	<b>2.0</b>	<b>99.8</b>	<b>99.2</b>	<b>98.9</b>	<b>23.9</b>	<b>95.0</b>	<b>79.7</b>	<b>75.6</b>
<b>Bangkok</b>	<b>34.7</b>	<b>98.9</b>	<b>1.3</b>	<b>1.7</b>	<b>100</b>	<b>99.9</b>	<b>99.7</b>	<b>51.2</b>	<b>97.8</b>	<b>78.6</b>	<b>82.0</b>
<b>Bangkok Vicinity</b>	<b>44.1</b>	<b>98.5</b>	<b>1.3</b>	<b>1.9</b>	<b>100</b>	<b>99.3</b>	<b>99.8</b>	<b>43.0</b>	<b>99.2</b>	<b>82.8</b>	<b>86.5</b>
Nakhon Pathom	61.2	99.1	1.2	1.9	100	98.5	99.9	37.3	99.3	90.4	91.4
Nonthaburi	41.5	97.7	1.2	1.8	100	99.8	100	54.9	98.5	85.3	88.4
Pathum Thani	50.4	99.7	1.4	1.8	100	98.0	99.5	50.6	99.6	87.8	89.9
Samut Prakan	30.1	99.3	1.4	2.0	100	100	99.7	43.2	99.5	75.5	79.5
Samut Sakhon	37.2	95.7	1.4	1.9	100	100	100	21.4	99.5	72.7	83.4
<b>Central Region</b>	<b>79.9</b>	<b>97.5</b>	<b>1.6</b>	<b>2.2</b>	<b>99.9</b>	<b>98.0</b>	<b>98.8</b>	<b>30.3</b>	<b>97.3</b>	<b>87.3</b>	<b>83.8</b>
Chai Nat	83.3	92.6	1.4	2.1	99.3	98.7	97.0	23.2	94.7	77.6	74.8
Phra Nakhon Si Ayutthaya	78.2	99.3	1.7	2.2	100	98.7	99.9	35.3	99.9	92.2	86.8
Lop Buri	81.5	98.1	2.0	2.2	100	94.8	97.5	23.1	95.9	84.8	86.2
Saraburi	70.9	98.0	1.6	2.3	99.8	99.8	99.5	36.2	97.4	90.0	79.7
Sing Buri	82.6	96.8	1.2	1.9	100	98.4	99.8	39.0	98.5	88.7	87.8
Ang Thong	90.9	97.9	1.4	2.3	100	99.6	99.7	27.2	98.8	88.2	88.2
<b>Eastern Region</b>	<b>67.2</b>	<b>99.0</b>	<b>1.6</b>	<b>2.1</b>	<b>99.9</b>	<b>99.6</b>	<b>99.0</b>	<b>26.5</b>	<b>97.2</b>	<b>85.5</b>	<b>87.2</b>
Chanthaburi	72.1	99.7	1.3	1.9	99.7	98.7	97.8	26.1	94.3	82.5	88.7
Chachoengsao	65.7	98.7	1.7	2.1	99.5	100	99.0	26.9	97.3	79.2	85.3
Chon Buri	47.4	99.5	1.4	1.9	100	100	100	35.5	99.4	89.4	88.6
Trat	65.0	98.0	1.5	2.1	99.3	100	98.0	23.3	94.9	83.2	87.9
Nakhon Nayok	78.8	100	2.4	2.7	100	96.8	100	30.8	98.3	91.9	95.3
Prachin Buri	81.1	96.6	1.5	2.2	100	100	97.9	18.3	95.3	86.1	86.8
Rayong	67.3	99.7	2.0	2.2	100	100	100	30.4	100	91.0	96.7
Sa Kaeo	86.9	99.1	1.4	2.0	100	99.5	97.8	11.0	95.0	79.9	71.9
<b>Western Region</b>	<b>77.3</b>	<b>95.7</b>	<b>1.4</b>	<b>2.0</b>	<b>99.9</b>	<b>99.4</b>	<b>98.6</b>	<b>25.0</b>	<b>96.2</b>	<b>86.6</b>	<b>86.8</b>
Ratchaburi	70.4	96.6	1.3	1.8	100.0	100	99.0	30.9	96.8	88.4	83.1
Kanchanaburi	80.6	93.2	1.3	2.1	100.0	98.4	98.3	17.9	95.5	84.6	81.5
Suphan Buri	76.8	95.3	1.3	2.1	100	99.6	99.0	23.1	97.3	88.4	92.0
Samut Songkhram	64.8	98.9	1.4	2.0	100	99.6	100	36.9	98.0	84.1	89.6
Phetchaburi	90.3	97.0	1.7	2.2	99.7	99.6	99.4	30.1	96.2	88.0	89.7
Prachuap Khiri Khan	78.4	96.0	1.8	2.0	99.4	99.4	95.8	18.4	93.4	82.8	87.0
<b>Northeastern Region</b>	<b>92.6</b>	<b>98.4</b>	<b>1.3</b>	<b>2.1</b>	<b>100.0</b>	<b>99.8</b>	<b>99.4</b>	<b>10.2</b>	<b>95.1</b>	<b>74.3</b>	<b>59.6</b>
Nakhon Ratchasima	87.7	99.1	1.4	2.5	100	99.5	99.1	11.8	93.6	76.7	77.7
Buri Ram	93.9	99.5	1.7	2.3	100	99.5	99.4	6.2	96.0	67.9	56.8
Surin	95.0	97.2	1.7	2.4	99.6	99.6	100	9.7	90.4	60.5	49.0
Si Sa Ket	94.9	97.8	1.6	1.9	100	100.0	100	7.0	92.0	61.3	54.1
Ubon Ratchathani	94.0	97.6	1.3	2.1	100	100.0	99.0	12.9	92.3	70.2	43.0
Yasothon	96.8	93.8	1.5	2.0	100	99.9	99.3	9.4	97.7	78.6	42.8
Chaiyaphum	93.3	98.8	1.2	2.1	100	100	98.5	9.3	92.6	72.9	66.8
Amnat Charoen	91.5	100	1.3	2.0	100	100	99.9	11.8	98.5	76.3	48.6
Nong Bua Lam Phu	94.0	99.7	1.6	2.1	99.2	100	98.3	6.4	95.3	84.4	47.0
Khon Kaen	87.3	99.1	0.9	1.8	100	99.9	100	13.0	98.6	80.0	61.3
Udon Thani	94.3	99.9	1.5	2.0	100	99.9	99.3	14.2	98.1	84.5	67.9
Loei	93.7	96.8	1.5	1.9	100	99.9	99.4	8.5	95.0	76.5	72.0
Nong Khai	91.4	94.7	1.1	1.8	100	99.7	98.5	15.0	95.9	82.7	64.5
Maha Sarakham	93.1	99.4	1.1	2.1	100	99.3	100	10.0	96.5	73.7	60.0
Roi Et	96.8	97.3	1.3	2.1	100	99.8	100	7.5	97.7	73.7	59.7
Kalasin	91.7	99.2	1.2	2.0	100	100	99.4	7.5	98.3	80.2	66.0
Sakon Nakhon	93.5	99.0	1.7	2.1	100	99.9	99.6	7.0	93.9	74.9	55.3
Nakhon Phanom	94.4	99.3	1.3	2.0	100	100	100	9.7	97.0	80.1	46.2
Mukdahan	89.1	99.4	1.1	1.9	100	100	99.6	11.8	89.6	66.9	39.4
<b>Northern Region</b>	<b>85.3</b>	<b>96.2</b>	<b>1.2</b>	<b>1.8</b>	<b>99.8</b>	<b>98.3</b>	<b>98.1</b>	<b>22.2</b>	<b>92.8</b>	<b>82.8</b>	<b>76.3</b>
Chiang Mai	77.0	93.2	0.9	1.6	99.7	96.9	98.3	28.8	87.4	78.6	61.7
Lamphun	90.6	99.1	0.9	1.5	100	95.4	99.3	28.4	90.4	87.0	79.9
Lampang	90.2	98.2	1.2	1.7	100	99.8	99.4	26.8	94.3	90.8	85.3
Uttaradit	93.7	97.9	1.3	2.0	100	98.9	99.6	24.9	97.1	87.3	80.4
Phrae	91.8	99.9	1.6	1.9	100	100.0	99.5	27.7	95.9	93.9	81.0
Nan	88.7	99.0	0.8	1.4	99.5	95.9	99.5	20.4	92.6	83.7	78.5
Phayao	92.2	98.0	0.9	1.7	100	99.6	100	23.3	94.6	87.6	79.0
Chiang Rai	88.4	95.4	1.4	1.5	100	99.2	97.5	22.9	91.1	82.8	77.9
Mae Hong Son	62.2	92.7	1.2	1.9	99.2	66.5	70.9	15.7	61.4	46.8	39.7
Nakhon Sawan	77.4	99.4	1.0	1.7	100	100.0	100	20.7	98.0	84.2	86.8
Uthai Thani	86.2	96.2	1.5	2.2	99.9	100.0	97.6	17.0	95.4	78.5	76.0
Kamphaeng Phet	86.8	97.9	1.5	2.1	100	99.7	99.4	12.7	98.9	85.1	76.6
Tak	67.9	92.1	1.2	2.1	97.9	96.9	86.7	23.1	73.5	62.3	56.3
Sukhothai	91.8	99.2	1.6	2.3	100	100.0	98.1	14.3	94.9	85.9	83.0
Phitsanulok	86.8	96.3	1.4	1.9	100	99.6	100	21.5	96.5	85.1	80.9
Phichit	92.5	95.3	1.7	2.6	100	99.9	99.4	23.6	98.4	87.3	84.8
Phetchabun	86.2	90.2	1.3	2.0	100	100.0	99.6	15.7	95.6	77.9	73.7
<b>Southern Region</b>	<b>80.4</b>	<b>98.4</b>	<b>1.3</b>	<b>2.0</b>	<b>99.2</b>	<b>98.3</b>	<b>97.9</b>	<b>20.9</b>	<b>91.0</b>	<b>79.3</b>	<b>88.8</b>
Nakhon Si Thammarat	82.2	98.2	1.2	2.0	98.7	98.5	97.8	16.2	91.3	81.3	89.8
Krabi	77.7	98.2	1.4	2.3	98.9	99.5	97.0	11.1	91.9	78.9	84.0
Phang-nga	78.5	97.7	1.1	1.9	100	100	93.3	24.8	93.5	94.0	87.9
Phuket	47.4	98.3	1.2	1.9	100	100	99.1	40.3	97.4	86.6	88.7
Surat Thani	79.4	100.0	1.1	2.1	100	100	97.8	27.9	93.4	86.9	93.2
Ranong	67.3	97.6	1.2	2.1	98.6	98.3	90.8	23.9	90.8	75.2	58.7
Chumphon	85.3	98.8	1.3	1.8	99.5	99.8	98.0	13.1	94.0	83.1	88.3
Songkhla	72.5	97.0	1.2	1.7	99.7	98.0	99.0	28.1	95.0	84.8	89.8
Satun	84.3	99.2	1.2	2.2	98.9	98.3	98.6	17.5	90.1	80.4	89.8
Trang	85.8	97.9	1.3	1.9	99.9	100	97.1	22.5	90.7	77.9	87.0
Phatthalung	92.7	99.4	0.8	1.6	100	99.1	98.9	15.9	89.5	82.2	90.8
Pattani	85.3	98.7	2.1	2.7	98.6	99.9	99.0	19.9	82.9	61.5	85.8
Yala	80.7	97.7	1.5	2.5	98.9	88.0	98.6	20.6	90.2	72.1	90.6
Narathiwat	85.3	100	1.7	2.8	96.9	96.0	98.8	15.0	83.2	60.3	89.3

See Annex III for data sources

**Table AII.5 Housing and living environment (continued)**

Location	Living environment						
	Population affected by flood 2004		Population affected by drought 2005		Population affected by flood 2004 and/or drought 2005		Households not affected by pollution 2005
	(number)	(%)	(number)	(%)	(number)	(%)	(% hholds)
	12	13	14	15	16	17	18
<b>Kingdom</b>	<b>1,239,390</b>	<b>2.0</b>	<b>11,147,627</b>	<b>17.9</b>	<b>12,387,017</b>	<b>19.8</b>	<b>95.3</b>
<b>Bangkok</b>	<b>na</b>		<b>na</b>		<b>na</b>		<b>na</b>
<b>Bangkok Vicinity</b>	<b>6,612</b>	<b>0.2</b>	<b>34,916</b>	<b>0.8</b>	<b>41,528</b>	<b>1.0</b>	<b>94.9</b>
Nakhon Pathom	0.0	0.0	0	0.0	0	0.0	95.8
Nonthaburi	0.0	0.0	0	0.0	0	0.0	97.5
Pathum Thani	0.0	0.0	0	0.0	0	0.0	95.9
Samut Prakan	6,612	0.6	34,916	3.2	41,528	3.9	94.9
Samut Sakhon	0.0	0.0	0	0.0	0	0.0	87.5
<b>Central Region</b>	<b>3,600</b>	<b>0.1</b>	<b>191,424</b>	<b>6.5</b>	<b>195,024</b>	<b>6.6</b>	<b>95.2</b>
Chai Nat	0.0	0.0	49,129	14.4	49,129	14.4	96.8
Phra Nakhon Si Ayutthaya	3,600	0.5	14,404	1.9	18,004	2.4	95.6
Lop Buri	0.0	0.0	109,856	14.6	109,856	14.6	97.0
Saraburi	0.0	0.0	12,800	2.1	12,800	2.1	88.8
Sing Buri	0.0	0.0	2,685	1.2	2,685	1.2	97.4
Ang Thong	0.0	0.0	2,550	0.9	2,550	0.9	96.1
<b>Eastern Region</b>	<b>63,468</b>	<b>1.5</b>	<b>579,217</b>	<b>13.4</b>	<b>642,685</b>	<b>14.8</b>	<b>95.2</b>
Chanthaburi	0.0	0.0	41,681	8.4	41,681	8.4	93.7
Chachoengsao	1,250	0.2	239,664	37.0	240,914	37.2	96.2
Chon Buri	0.0	0.0	41,322	3.5	41,322	3.5	95.0
Trat	3,600	1.6	44,192	20.2	47,792	21.8	94.1
Nakhon Nayok	18,942	7.6	29,610	11.8	48,552	19.4	94.1
Prachin Buri	35,604	7.9	8,751	1.9	44,355	9.9	97.9
Rayong	792	0.1	8,089	1.4	8,881	1.6	91.8
Sa Kaeo	3,280	0.6	165,908	30.9	169,188	31.5	96.7
<b>Western Region</b>	<b>5,660</b>	<b>0.2</b>	<b>532,840</b>	<b>14.7</b>	<b>538,500</b>	<b>14.8</b>	<b>95.2</b>
Ratchaburi	2,500	0.3	128,840	15.6	131,340	15.9	94.5
Kanchanaburi	600	0.1	97,886	11.8	98,486	11.9	94.8
Suphan Buri	0.0	0.0	161,613	19.2	161,613	19.2	95.0
Samut Songkhram	0.0	0.0	15,729	8.1	15,729	8.1	99.4
Phetchaburi	2,560	0.6	119,794	26.4	122,354	27.0	97.8
Prachuap Khiri Khan	0.0	0.0	8,978	1.8	8,978	1.8	92.9
<b>Northeastern Region</b>	<b>876,990</b>	<b>4.1</b>	<b>5,649,061</b>	<b>26.5</b>	<b>6,526,051</b>	<b>30.6</b>	<b>97.3</b>
Nakhon Ratchasima	2,637	0.1	144,694	5.7	147,331	5.8	97.6
Buri Ram	0.0	0.0	215,025	14.0	215,025	14.0	100.0
Surin	18,039	1.3	892,961	65.0	911,000	66.3	97.4
Si Sa Ket	20,480	1.4	83,737	5.8	104,217	7.2	97.3
Ubon Ratchathani	74,080	4.2	397,543	22.4	471,623	26.6	97.5
Yasothon	84,380	15.6	36,779	6.8	121,159	22.4	99.3
Chaiyaphum	8,617	0.8	306,306	27.4	314,923	28.2	96.0
Amnat Charoen	3,765	1.0	68,403	18.5	72,168	19.6	99.0
Nong Bua Lam Phu	88,820	17.9	57,140	11.5	145,960	29.4	96.2
Khon Kaen	28,650	1.6	491,571	28.1	520,221	29.8	97.3
Udon Thani	0.0	0.0	879,620	57.7	879,620	57.7	96.4
Loei	2,200	0.4	145,095	23.7	147,295	24.1	96.7
Nong Khai	0.0	0.0	724,119	80.8	724,119	80.8	94.5
Maha Sarakham	0.0	0.0	246,800	26.3	246,800	26.3	98.0
Roi Et	240,600	18.4	246,690	18.8	487,290	37.2	99.1
Kalasin	207,372	21.3	244,967	25.2	452,339	46.5	97.6
Sakon Nakhon	10,250	0.9	171,682	15.5	181,932	16.5	93.9
Nakhon Phanom	87,100	12.6	253,259	36.5	340,359	49.1	97.1
Mukdahan	0.0	0.0	42,670	12.8	42,670	12.8	97.8
<b>Northern Region</b>	<b>247,677</b>	<b>2.1</b>	<b>2,534,306</b>	<b>21.3</b>	<b>2,781,983</b>	<b>23.4</b>	<b>93.1</b>
Chiang Mai	3,650	0.2	59,658	3.6	63,308	3.8	91.2
Lamphun	0.0	0.0	14,817	3.7	14,817	3.7	96.5
Lampang	3,500	0.5	125,430	16.1	128,930	16.6	96.9
Uttaradit	2,650	0.6	94,937	20.2	97,587	20.8	95.4
Phrae	119,529	25.4	152,162	32.3	271,691	57.6	97.2
Nan	12,540	2.6	73,267	15.3	85,807	17.9	96.1
Phayao	480	0.1	109,095	22.4	109,575	22.5	95.0
Chiang Rai	15,269	1.2	272,900	22.3	288,169	23.5	94.6
Mae Hong Son	100	0.0	125,627	49.5	125,727	49.6	93.4
Nakhon Sawan	5,692	0.5	178,775	16.6	184,467	17.1	91.1
Uthai Thani	0.0	0.0	93,328	28.6	93,328	28.6	95.6
Kamphaeng Phet	1,508	0.2	185,248	25.4	186,756	25.6	82.2
Tak	13,813	2.6	123,546	23.7	137,359	26.3	94.9
Sukhothai	16,582	2.7	320,457	52.5	337,039	55.2	92.5
Phitsanulok	18,950	2.3	156,529	18.6	175,479	20.9	90.5
Phichit	19,854	3.6	208,238	37.3	228,092	40.8	90.8
Phetchabun	13,560	1.4	240,292	24.0	253,852	25.3	94.8
<b>Southern Region</b>	<b>35,383</b>	<b>0.4</b>	<b>1,625,863</b>	<b>19.1</b>	<b>1,661,246</b>	<b>19.5</b>	<b>93.3</b>
Nakhon Si Thammarat	14,444	1.0	296,243	19.7	310,687	20.7	91.6
Krabi	0.0	0.0	101,519	25.7	101,519	25.7	90.2
Phang-nga	1,500	0.6	71,073	29.4	72,573	30.1	96.5
Phuket	1,200	0.4	52,356	17.9	53,556	18.3	99.3
Surat Thani	1,962	0.2	137,206	14.5	139,168	14.7	86.6
Ranong	3,247	1.8	189,481	106.4	192,728	108.2	97.6
Chumphon	9,980	2.1	165,347	34.8	175,327	36.9	91.4
Songkhla	0.0	0.0	417,095	32.0	417,095	32.0	96.6
Satun	2,900	1.0	58,690	21.1	61,590	22.2	91.4
Trang	150	0.0	23,983	4.0	24,133	4.0	94.6
Phatthalung	0.0	0.0	36,855	7.4	36,855	7.4	89.2
Pattani	0.0	0.0	8,544	1.3	8,544	1.3	97.3
Yala	0.0	0.0	16,817	3.6	16,817	3.6	97.0
Narathiwat	0.0	0.0	50,654	7.2	50,654	7.2	98.8

See Annex III for data sources

**Table AII.6 Family and community life**

Location	Family life									
	Female headed households 2005		Elderly headed households 2005				Single headed households 2005			
	(number)	(%)	Male	Female	Total	% of total hholds	Male	Female	Total	% total hholds
	1	2	3	4	5	6	7	8	9	10
<b>Kingdom</b>	<b>5,336,751</b>	<b>29.6</b>	<b>2,423,219</b>	<b>1,496,680</b>	<b>3,919,899</b>	<b>21.7</b>	<b>721,269</b>	<b>2,372,242</b>	<b>3,093,510</b>	<b>17.2</b>
<b>Bangkok</b>	<b>679,766</b>	<b>33.1</b>	<b>182,122</b>	<b>134,511</b>	<b>316,634</b>	<b>15.4</b>	<b>71,836</b>	<b>222,386</b>	<b>294,222</b>	<b>14.3</b>
<b>Bangkok Vicinity</b>	<b>455,295</b>	<b>32.0</b>	<b>105,557</b>	<b>86,171</b>	<b>191,727</b>	<b>13.5</b>	<b>39,926</b>	<b>143,452</b>	<b>183,378</b>	<b>12.9</b>
Nakhon Pathom	89,733	34.2	26,906	27,102	54,008	20.6	9,461	38,733	48,194	18.3
Nonthaburi	132,323	36.9	27,502	27,016	54,517	15.2	11,518	38,846	50,364	14.1
Pathum Thani	61,102	29.3	16,052	8,023	24,075	11.6	4,287	17,218	21,505	10.3
Samut Prakan	125,706	30.0	21,836	16,945	38,781	9.3	10,627	34,427	45,054	10.7
Samut Sakhon	46,431	27.0	13,261	7,085	20,346	11.8	4,032	14,229	18,261	10.6
<b>Central Region</b>	<b>325,932</b>	<b>37.6</b>	<b>126,858</b>	<b>105,678</b>	<b>232,536</b>	<b>26.8</b>	<b>45,192</b>	<b>147,730</b>	<b>192,921</b>	<b>22.3</b>
Chai Nat	39,111	37.8	15,722	12,159	27,880	26.9	3,873	17,015	20,888	20.2
Phra Nakhon Si Ayutthaya	88,980	43.1	29,096	29,637	58,733	28.4	10,412	34,286	44,698	21.6
Lop Buri	71,126	32.8	33,382	26,160	59,543	27.5	13,210	40,746	53,956	24.9
Saraburi	70,895	35.6	28,564	23,377	51,941	26.1	10,281	33,475	43,757	22.0
Sing Buri	25,977	36.5	7,791	4,566	12,357	17.4	2,898	9,379	12,277	17.3
Ang Thong	29,843	42.7	12,302	9,779	22,081	31.6	4,517	12,829	17,345	24.8
<b>Eastern Region</b>	<b>411,278</b>	<b>31.7</b>	<b>155,255</b>	<b>100,363</b>	<b>255,618</b>	<b>19.7</b>	<b>58,723</b>	<b>180,244</b>	<b>238,967</b>	<b>18.4</b>
Chanthaburi	42,993	28.0	18,179	11,661	29,840	19.4	6,480	18,765	25,245	16.4
Chachoengsao	56,829	31.5	24,987	16,105	41,092	22.8	6,871	25,320	32,191	17.8
Chon Buri	127,812	37.2	28,212	23,330	51,542	15.0	15,026	54,600	69,626	20.3
Trat	22,126	29.1	10,752	5,636	16,389	21.5	4,917	9,235	14,152	18.6
Nakhon Nayok	23,587	35.6	11,837	7,952	19,789	29.8	3,586	11,582	15,168	22.9
Prachin Buri	39,709	32.1	17,787	12,578	30,364	24.5	8,182	20,558	28,740	23.2
Rayong	42,879	29.3	14,838	8,846	23,684	16.2	5,963	18,873	24,837	17.0
Sa Kaeo	55,344	26.8	28,664	14,254	42,918	20.8	7,697	21,311	29,008	14.1
<b>Western Region</b>	<b>342,689</b>	<b>34.7</b>	<b>148,245</b>	<b>109,079</b>	<b>257,325</b>	<b>26.1</b>	<b>53,064</b>	<b>164,091</b>	<b>217,155</b>	<b>22.0</b>
Ratchaburi	99,073	40.2	34,166	32,717	66,883	27.1	13,415	50,055	63,470	25.7
Kanchanaburi	62,584	27.0	38,453	19,765	58,218	25.1	11,162	34,688	45,850	19.8
Suphan Buri	76,413	36.1	33,420	22,033	55,454	26.2	13,833	30,697	44,531	21.0
Samut Songkhram	18,308	39.0	5,574	4,633	10,207	21.7	2,299	6,961	9,260	19.7
Phetchaburi	45,927	39.0	17,943	15,502	33,445	28.4	5,266	20,632	25,898	22.0
Prachuap Khiri Khan	40,385	30.4	18,688	14,430	33,118	24.9	7,088	21,058	28,147	21.2
<b>Northeastern Region</b>	<b>1,536,694</b>	<b>27.2</b>	<b>819,467</b>	<b>470,360</b>	<b>1,289,828</b>	<b>22.8</b>	<b>212,031</b>	<b>738,995</b>	<b>951,025</b>	<b>16.8</b>
Nakhon Ratchasima	253,790	35.2	93,670	83,345	177,015	24.5	33,439	109,274	142,713	19.8
Buri Ram	128,867	32.4	59,260	40,583	99,843	25.1	15,181	52,804	67,985	17.1
Surin	124,574	31.6	64,774	45,131	109,905	27.9	15,599	59,461	75,060	19.0
Si Sa Ket	95,316	24.2	41,954	12,992	54,946	14.0	6,523	32,919	39,443	10.0
Ubon Ratchathani	72,418	16.9	63,525	20,379	83,905	19.6	14,405	38,751	53,156	12.4
Yasothon	35,772	26.0	22,959	13,593	36,551	26.6	4,137	23,201	27,338	19.9
Chaiyaphum	74,288	23.5	54,313	25,923	80,236	25.3	13,496	37,168	50,664	16.0
Amnat Charoen	26,298	20.1	23,990	12,841	36,831	28.2	6,704	17,679	24,383	18.6
Nong Bua Lam Phu	43,340	25.8	23,429	9,166	32,595	19.4	3,441	18,015	21,456	12.8
Khon Kaen	107,270	23.9	69,796	32,616	102,412	22.8	15,122	63,986	79,108	17.6
Udon Thani	85,363	23.8	53,619	23,800	77,419	21.6	20,172	41,428	61,600	17.2
Loei	46,648	28.0	28,586	14,865	43,450	26.1	3,263	22,214	25,477	15.3
Nong Khai	75,259	30.0	35,360	23,292	58,652	23.4	8,049	33,374	41,423	16.5
Maha Sarakham	61,050	27.5	34,583	25,250	59,834	26.9	9,241	39,398	48,640	21.9
Roi Et	102,918	29.1	53,008	30,246	83,255	23.5	16,702	51,266	67,968	19.2
Kalasin	64,394	27.5	29,194	14,659	43,853	18.8	6,084	31,979	38,064	16.3
Sakon Nakhon	75,673	26.8	36,275	21,955	58,230	20.6	12,587	35,706	48,294	17.1
Nakhon Phanom	43,951	29.3	20,780	15,073	35,853	23.9	5,239	22,099	27,338	18.2
Mukdahan	19,506	20.4	10,392	4,651	15,043	15.7	2,648	8,272	10,919	11.4
<b>Northern Region</b>	<b>958,946</b>	<b>27.8</b>	<b>560,266</b>	<b>294,893</b>	<b>855,159</b>	<b>24.8</b>	<b>172,290</b>	<b>460,735</b>	<b>633,025</b>	<b>18.3</b>
Chiang Mai	126,931	25.9	80,562	39,331	119,893	24.4	38,314	70,149	108,463	22.1
Lamphun	25,780	21.6	23,270	9,733	33,003	27.6	6,883	16,230	23,114	19.4
Lampang	58,169	26.0	39,035	22,665	61,700	27.6	14,763	32,976	47,739	21.3
Uttaradit	42,065	30.6	22,701	11,657	34,359	25.0	5,267	17,716	22,982	16.7
Phrae	28,900	21.3	32,981	10,350	43,331	32.0	6,841	17,609	24,450	18.0
Nan	26,804	20.6	22,318	7,286	29,603	22.8	3,977	13,006	16,983	13.1
Phayao	38,357	25.0	26,247	14,429	40,677	26.5	9,258	23,677	32,935	21.5
Chiang Rai	96,539	25.5	63,743	28,285	92,028	24.3	16,385	46,131	62,516	16.5
Mae Hong Son	10,825	17.3	9,274	3,097	12,371	19.8	3,724	5,796	9,520	15.2
Nakhon Sawan	111,662	36.1	35,730	24,484	60,215	19.5	12,929	36,504	49,433	16.0
Uthai Thani	31,944	36.2	14,147	8,802	22,949	26.0	3,922	12,881	16,803	19.0
Kamphaeng Phet	49,835	23.2	35,522	21,892	57,414	26.7	9,849	30,080	39,929	18.6
Tak	36,917	27.8	16,435	7,979	24,414	18.4	5,600	16,678	22,278	16.8
Sukhothai	71,574	40.1	23,586	24,585	48,171	27.0	8,277	30,829	39,106	21.9
Phitsanulok	67,794	27.0	40,238	16,631	56,870	22.7	9,081	23,886	32,967	13.1
Phichit	61,060	38.7	27,711	21,204	48,914	31.0	7,029	29,041	36,071	22.9
Phetchabun	73,791	25.6	46,766	22,481	69,248	24.0	10,192	37,546	47,738	16.6
<b>Southern Region</b>	<b>626,150</b>	<b>27.1</b>	<b>325,449</b>	<b>195,625</b>	<b>521,074</b>	<b>22.6</b>	<b>68,207</b>	<b>314,609</b>	<b>382,816</b>	<b>16.6</b>
Nakhon Si Thammarat	122,744	28.7	66,624	40,870	107,493	25.1	4,785	67,710	72,496	16.9
Krabi	20,568	21.0	12,540	6,615	19,155	19.6	1,769	10,787	12,555	12.8
Phang-nga	17,021	27.2	9,575	5,820	15,394	24.6	2,759	7,377	10,136	16.2
Phuket	28,498	31.9	9,776	5,667	15,443	17.3	2,896	10,024	12,919	14.5
Surat Thani	74,926	28.1	34,448	22,821	57,269	21.5	8,342	36,739	45,081	16.9
Ranong	12,226	23.3	5,677	3,185	8,862	16.9	1,934	7,340	9,275	17.7
Chumphon	44,073	32.3	17,176	14,017	31,193	22.9	6,601	17,322	23,922	17.5
Songkhla	101,380	28.6	48,233	28,383	76,616	21.6	13,468	46,235	59,703	16.8
Satun	11,242	17.0	10,066	2,842	12,908	19.5	2,168	6,401	8,569	13.0
Trang	52,297	31.0	24,606	13,712	38,318	22.7	7,212	22,646	29,858	17.7
Phatthalung	37,759	26.8	21,261	14,697	35,959	25.5	3,405	17,208	20,613	14.6
Pattani	34,041	26.4	22,213	12,242	34,455	26.7	4,548	18,368	22,916	17.8
Yala	27,421	21.4	17,752	7,508	25,259	19.7	3,248	16,076	19,324	15.1
Narathiwat	41,955	22.5	25,502	17,247	42,748	22.9	5,073	30,378	35,450	19.0

See Annex III for data sources

**Table AII.6 Family and community life (continued)**

Location	Family life						Violent crimes reported per 100,000 pop	Drug-related crimes arrested per 100,000 pop
	Elderly living alone 2002		Orphans, homeless/ abandoned children and children affected by AIDS 2005 per 1,000 pop	Children aged 15-17 2005				
	(number)	% of total elderly		Total	Working	% working		
	11	12	13	14	15	16		
<b>Kingdom</b>	<b>373,515</b>	<b>6.26</b>	<b>2.5</b>	<b>3,140,098</b>	<b>581,127</b>	<b>18.5</b>	<b>16</b>	<b>170</b>
<b>Bangkok</b>	<b>23,671</b>	<b>3.82</b>	<b>na.</b>	<b>237,103</b>	<b>46,549</b>	<b>18.0</b>	<b>32</b>	<b>534</b>
<b>Bangkok Vicinity</b>	<b>12,040</b>	<b>3.74</b>	<b>0.3</b>	<b>175,205</b>	<b>44,230</b>	<b>25.2</b>	<b>24</b>	<b>302</b>
Nakhon Pathom	5,639	6.40	0.5	41,834	12,261	29.3	24	236
Nonthaburi	2,035	2.70	0.1	39,995	7,002	17.5	23	212
Pathum Thani	874	1.83	0.1	27,644	3,369	12.2	23	253
Samut Prakan	1,905	2.52	0.4	44,512	11,980	26.9	17	477
Samut Sakhon	1,587	4.49	0.1	21,220	9,618	45.3	41	283
<b>Central Region</b>	<b>30,663</b>	<b>7.57</b>	<b>1.1</b>	<b>137,110</b>	<b>25,975</b>	<b>18.9</b>	<b>14</b>	<b>173</b>
Chai Nat	3,762	7.11	0.9	16,091	2,376	14.8	10	56
Phra Nakhon Si Ayutthaya	9,101	7.73	0.6	32,887	4,145	12.6	18	244
Lop Buri	5,737	6.55	2.1	33,812	8,748	25.9	11	119
Saraburi	4,598	7.48	0.8	30,624	6,732	22.0	17	139
Sing Buri	3,646	9.14	0.2	10,902	1,627	14.9	13	143
Ang Thong	3,819	8.34	0.7	12,794	2,347	18.3	10	360
<b>Eastern Region</b>	<b>24,943</b>	<b>6.03</b>	<b>1.4</b>	<b>206,159</b>	<b>46,815</b>	<b>22.7</b>	<b>18</b>	<b>321</b>
Chanthaburi	2,334	5.41	1.2	24,377	7,070	29.0	11	150
Chachoengsao	4,510	5.61	0.8	31,608	6,254	19.8	15	169
Chon Buri	4,914	4.96	0.3	49,254	15,484	31.4	28	673
Trat	1,127	6.85	2.6	11,733	2,359	20.1	9	96
Nakhon Nayok	3,855	10.08	1.3	11,068	1,521	13.7	8	104
Prachin Buri	4,121	9.08	1.6	19,833	2,336	11.8	16	157
Rayong	1,878	3.80	2.3	23,509	6,907	29.4	27	318
Sa Kaeo	2,203	5.26	2.3	34,777	4,884	14.0	6	225
<b>Western Region</b>	<b>27,043</b>	<b>6.93</b>	<b>0.8</b>	<b>178,612</b>	<b>49,987</b>	<b>28.0</b>	<b>16</b>	<b>168</b>
Ratchaburi	6,032	6.02	0.8	41,991	15,698	37.4	17	130
Kanchanaburi	3,952	6.82	1.1	41,800	8,996	21.5	13	219
Suphan Buri	8,108	7.44	0.4	41,186	11,838	28.7	17	181
Samut Songkhram	2,000	6.43	0.6	8,959	1,935	21.6	32	268
Phetchaburi	4,403	8.40	0.7	21,679	4,427	20.4	8	69
Prachuap Khiri Khan	2,547	6.41	1.1	22,997	7,093	30.8	19	174
<b>Northeastern Region</b>	<b>95,624</b>	<b>5.24</b>	<b>2.8</b>	<b>1,154,144</b>	<b>168,443</b>	<b>14.6</b>	<b>5</b>	<b>56</b>
Nakhon Ratchasima	13,841	5.24	2.3	136,725	19,307	14.1	6	58
Buri Ram	5,115	3.95	3.7	85,258	12,181	14.3	3	28
Surin	3,790	2.89	3.2	81,430	10,703	13.1	3	18
Si Sa Ket	9,842	7.87	4.7	79,409	11,870	14.9	3	38
Ubon Ratchathani	12,885	8.25	2.1	91,856	21,212	23.1	5	99
Yasothon	1,437	2.66	3.1	26,485	3,633	13.7	1	72
Chaiyaphum	7,188	6.72	2.8	54,801	12,966	23.7	4	52
Amnat Charoen	1,715	5.35	4.7	27,923	5,385	19.3	3	154
Nong Bua Lam Phu	1,044	3.04	2.3	37,583	7,359	19.6	4	49
Khon Kaen	4,704	2.97	2.3	86,299	7,792	9.0	7	43
Udon Thani	2,617	2.56	2.1	77,551	14,824	19.1	6	38
Loei	1,440	2.83	2.2	32,254	4,885	15.1	8	81
Nong Khai	4,320	6.23	2.7	55,087	5,288	9.6	5	75
Maha Sarakham	4,807	6.10	2.8	42,979	2,846	6.6	3	44
Roi Et	5,855	5.57	2.5	69,388	3,223	4.6	3	39
Kalasin	4,726	6.71	2.8	53,659	7,802	14.5	5	68
Sakon Nakhon	4,555	6.10	2.5	62,365	7,838	12.6	2	67
Nakhon Phanom	4,208	7.24	2.4	32,044	6,363	19.9	4	74
Mukdahan	1,536	6.70	2.7	21,048	2,966	14.1	8	100
<b>Northern Region</b>	<b>111,038</b>	<b>8.83</b>	<b>4.0</b>	<b>569,478</b>	<b>103,101</b>	<b>18.1</b>	<b>10</b>	<b>134</b>
Chiang Mai	14,965	7.90	5.8	78,896	13,735	17.4	11	155
Lamphun	7,155	11.73	3.3	16,469	1,798	10.9	6	93
Lampang	5,197	5.23	4.6	34,236	4,142	12.1	8	57
Uttaradit	5,491	10.19	2.5	20,639	3,904	18.9	9	75
Phrae	5,458	9.22	1.7	19,997	1,083	5.4	6	77
Nan	3,379	7.23	3.8	24,235	2,462	10.2	8	192
Phayao	4,350	8.08	10.0	24,686	2,150	8.7	7	75
Chiang Rai	13,131	11.07	9.8	66,324	10,843	16.3	11	411
Mae Hong Son	630	4.21	2.2	16,022	7,983	49.8	5	58
Nakhon Sawan	11,967	9.33	1.5	44,812	6,108	13.6	14	75
Uthai Thani	4,127	11.16	1.9	14,677	3,177	21.6	11	41
Kamphaeng Phet	5,521	9.12	2.1	39,424	8,867	22.5	10	102
Tak	3,602	11.76	1.6	26,681	3,899	14.6	13	294
Sukhothai	6,055	9.43	2.6	25,339	8,366	33.0	8	95
Phitsanulok	7,548	9.36	2.6	39,896	7,412	18.6	16	104
Phichit	7,484	10.42	1.3	23,391	5,289	22.6	7	53
Phetchabun	4,978	5.71	2.1	53,754	11,883	22.1	10	45
<b>Southern Region</b>	<b>48,494</b>	<b>6.59</b>	<b>2.0</b>	<b>482,287</b>	<b>99,858</b>	<b>20.7</b>	<b>37</b>	<b>124</b>
Nakhon Si Thammarat	9,920	6.15	1.5	93,713	22,977	24.5	22	78
Krabi	1,163	5.47	1.6	23,292	3,916	16.8	29	90
Phang-nga	615	2.98	0.9	12,127	4,191	34.6	15	104
Phuket	567	3.79	0.7	12,884	1,253	9.7	31	335
Surat Thani	6,712	8.17	1.4	50,850	10,591	20.8	38	154
Ranong	310	3.71	1.7	9,322	2,689	28.8	24	117
Chumphon	3,878	8.97	1.6	23,573	2,627	11.1	22	124
Songkhla	5,006	4.06	0.5	70,911	8,868	12.5	30	132
Satun	934	5.14	1.4	16,493	3,809	23.1	26	109
Trang	4,457	8.04	0.8	35,475	8,882	25.0	32	78
Phatthalung	4,916	10.02	2.9	28,226	3,119	11.1	83	49
Pattani	2,967	5.00	4.6	31,467	6,652	21.1	56	115
Yala	2,082	7.20	3.0	26,804	6,863	25.6	56	167
Narathiwat	4,967	9.86	5.4	47,150	13,421	28.5	54	191

See Annex III for data sources

**Table AII.7 Transport and communication**

Location	Transportation						Communication				
	Villages 2005	Villages with all-season main roads 2005	Vehicle registration 2005		Road length 2003		Land traffic accidents reported 2003	Households with TV 2004	Households with radio 2004	Population with mobile phone 2005	Population with Internet access 2005
	(number)	(%)	(number)	per 1,000 pop	(km)	km/provincial area	per 100,000 pop	(%)	(%)	(%)	(%)
	1	2	3	4	5	6	7	8	9	10	11
<b>Kingdom</b>	<b>69,110</b>	<b>45.0</b>	<b>24,317,110</b>	<b>390</b>	<b>78,449</b>	<b>0.15</b>	<b>148</b>	<b>93.0</b>	<b>63.6</b>	<b>36.7</b>	<b>12.0</b>
<b>Bangkok</b>	<b>na.</b>	<b>na.</b>	<b>6,107,860</b>	<b>1,079</b>	<b>1,175</b>	<b>0.75</b>	<b>395</b>	<b>93.3</b>	<b>79.4</b>	<b>59.3</b>	<b>25.9</b>
<b>Bangkok Vicinity</b>	<b>2,162</b>	<b>76.4</b>	<b>812,760</b>	<b>197</b>	<b>2,065</b>	<b>0.33</b>	<b>256</b>	<b>94.4</b>	<b>75.4</b>	<b>54.8</b>	<b>17.8</b>
Nakhon Pathom	866	74.0	315,828	390	593	0.27	210	95.3	76.3	47.6	12.6
Nonthaburi	300	77.7	148,647	153	294	0.47	155	93.9	75.2	61.2	24.1
Pathum Thani	430	76.5	94,639	116	577	0.38	175	95.0	80.5	56.2	16.6
Samut Prakan	323	79.9	81,714	76	299	0.30	313	93.8	70.7	56.8	20.7
Samut Sakhon	243	78.2	171,932	380	302	0.35	546	94.2	76.3	46.9	7.4
<b>Central Region</b>	<b>4,310</b>	<b>59.2</b>	<b>1,176,650</b>	<b>400</b>	<b>4,462</b>	<b>0.27</b>	<b>160</b>	<b>93.9</b>	<b>70.1</b>	<b>39.5</b>	<b>9.4</b>
Chai Nat	491	53.0	121,545	357	675	0.27	125	88.1	59.8	36.0	12.1
Phra Nakhon Si Ayutthaya	1,135	62.7	254,830	341	798	0.31	151	98.5	81.3	39.4	7.1
Lop Buri	1,064	51.2	278,205	370	1,478	0.24	180	91.3	64.7	37.9	9.1
Saraburi	884	60.0	285,319	474	818	0.23	137	93.6	63.6	43.2	10.3
Sing Buri	305	68.2	115,074	528	366	0.44	148	95.1	72.1	41.0	12.6
Ang Thong	431	68.7	121,677	429	328	0.34	230	96.5	82.0	38.6	7.7
<b>Eastern Region</b>	<b>4,501</b>	<b>42.8</b>	<b>2,046,528</b>	<b>472</b>	<b>5,842</b>	<b>0.16</b>	<b>104</b>	<b>94.5</b>	<b>61.6</b>	<b>43.2</b>	<b>10.2</b>
Chanthaburi	659	40.4	251,121	504	108	0.22	211	92.2	53.2	41.1	13.1
Chachoengsao	837	45.5	226,172	349	909	0.17	85	93.5	58.5	40.7	7.8
Chon Buri	558	46.4	741,283	632	1,046	0.24	62	95.5	80.6	53.6	11.2
Trat	241	49.8	82,460	376	612	0.22	60	93.1	44.5	37.2	10.0
Nakhon Nayok	404	50.5	96,630	385	360	0.17	157	95.5	74.1	37.0	7.9
Prachin Buri	694	34.6	164,984	367	701	0.15	181	94.2	44.8	40.8	11.2
Rayong	408	54.2	358,366	641	767	0.22	49	97.0	82.0	47.9	14.8
Sa Kaeo	700	33.9	125,512	234	1,338	0.19	102	94.1	30.7	32.7	5.2
<b>Western Region</b>	<b>3,926</b>	<b>51.9</b>	<b>1,460,766</b>	<b>403</b>	<b>5,981</b>	<b>0.14</b>	<b>125</b>	<b>93.9</b>	<b>59.9</b>	<b>37.4</b>	<b>8.4</b>
Ratchaburi	832	54.6	368,721	448	1,027	0.20	67	94.8	60.9	37.6	9.3
Kanchanaburi	878	46.2	265,106	321	1,481	0.08	185	93.3	66.3	40.1	9.8
Suphan Buri	957	47.4	332,624	395	1,357	0.25	69	93.4	54.9	33.9	6.2
Samut Songkhram	270	64.8	62,687	321	186	0.45	103	94.0	64.8	37.9	10.2
Phetchaburi	585	63.9	215,620	475	827	0.13	219	94.9	56.8	35.9	10.7
Prachuap Khiri Khan	404	42.8	216,008	444	1,102	0.17	142	93.8	59.1	39.6	5.8
<b>Northeastern Region</b>	<b>30,862</b>	<b>38.8</b>	<b>4,746,178</b>	<b>223</b>	<b>24,700</b>	<b>0.15</b>	<b>69</b>	<b>93.8</b>	<b>56.7</b>	<b>26.9</b>	<b>8.4</b>
Nakhon Ratchasima	3,519	40.5	742,938	292	2,670	0.13	93	93.1	57.4	28.3	6.0
Buri Ram	2,361	31.6	299,340	195	1,411	0.14	28	94.4	60.8	23.5	8.1
Surin	2,064	28.5	261,987	191	1,528	0.19	95	88.7	43.3	24.3	10.1
Si Sa Ket	2,532	35.0	233,148	161	1,552	0.18	69	90.4	47.2	21.0	7.7
Ubon Ratchathani	2,561	36.8	398,288	224	2,082	0.13	53	90.6	60.6	25.8	7.2
Yasothon	850	40.0	152,248	281	740	0.18	66	95.4	48.9	22.6	7.2
Chaiyaphum	1,507	41.0	217,951	195	1,157	0.09	66	93.9	48.3	24.5	6.3
Amnat Charoen	569	36.6	82,605	224	478	0.15	63	97.4	69.9	23.9	7.3
Nong Bua Lam Phu	572	38.8	79,692	160	532	0.14	37	94.4	58.6	28.0	6.6
Khon Kaen	2,129	40.8	487,813	279	1,519	0.14	36	97.1	61.8	32.6	14.0
Udon Thani	1,628	40.3	359,903	236	1,713	0.15	90	97.3	57.9	28.3	6.9
Loei	863	51.8	158,621	259	1,623	0.14	84	96.1	63.1	26.3	7.5
Nong Khai	1,192	47.5	174,935	195	1,143	0.16	57	94.7	69.0	31.4	9.6
Maha Sarakham	1,883	40.9	191,210	204	1,184	0.22	123	97.2	60.4	30.0	7.2
Roi Et	2,292	35.9	260,726	199	1,418	0.17	72	92.8	55.3	31.0	12.7
Kalasin	1,359	35.8	179,170	184	988	0.14	65	93.9	56.2	27.4	8.5
Sakon Nakhon	1,433	39.8	237,959	216	1,455	0.15	52	95.3	55.3	25.2	6.0
Nakhon Phanom	1,040	53.5	141,901	205	860	0.16	91	94.7	62.2	26.9	9.1
Mukdahan	508	51.4	85,743	257	647	0.15	86	88.8	49.8	22.5	14.6
<b>Northern Region</b>	<b>15,133</b>	<b>43.9</b>	<b>4,490,255</b>	<b>378</b>	<b>22,049</b>	<b>0.13</b>	<b>141</b>	<b>91.7</b>	<b>64.6</b>	<b>32.8</b>	<b>11.9</b>
Chiang Mai	1,825	45.0	789,212	478	2,623	0.13	319	85.7	71.3	33.0	14.9
Lamphun	466	60.7	231,269	571	838	0.19	90	94.0	72.4	34.5	11.5
Lampang	822	57.4	346,363	446	1,178	0.09	102	94.2	71.5	31.7	14.5
Uttaradit	569	57.3	181,338	386	1,249	0.16	136	93.0	59.9	32.9	12.5
Phrae	598	67.4	190,905	405	938	0.14	200	95.6	83.5	34.1	18.2
Nan	844	54.3	147,372	308	1,452	0.13	91	91.1	73.3	32.0	11.6
Phayao	673	50.5	191,856	394	939	0.15	130	94.1	65.2	29.0	11.7
Chiang Rai	1,576	41.8	451,334	368	1,685	0.14	131	93.4	73.2	34.7	15.0
Mae Hong Son	406	32.5	34,406	136	1,168	0.09	40	62.3	75.1	11.0	6.2
Nakhon Sawan	1,360	33.7	397,479	369	1,450	0.15	133	96.3	48.6	35.1	9.1
Uthai Thani	580	34.8	134,573	412	813	0.12	172	89.7	53.4	33.4	7.7
Kamphaeng Phet	927	30.3	226,484	311	1,220	0.14	46	95.1	62.4	33.0	9.4
Tak	513	37.6	150,106	287	1,304	0.08	140	77.5	50.9	28.6	12.2
Sukhothai	775	42.5	178,027	292	1,235	0.19	120	94.4	64.5	30.9	6.3
Phitsanulok	987	41.0	314,188	374	1,167	0.11	85	93.8	75.1	39.3	12.1
Phichit	851	40.7	231,902	415	1,054	0.23	116	93.8	66.7	35.1	7.6
Phetchabun	1,361	39.8	293,441	293	1,737	0.14	99	94.0	37.5	31.5	11.0
<b>Southern Region</b>	<b>8,216</b>	<b>52.6</b>	<b>3,476,113</b>	<b>408</b>	<b>12,176</b>	<b>0.17</b>	<b>165</b>	<b>90.3</b>	<b>58.4</b>	<b>34.2</b>	<b>10.2</b>
Nakhon Si Thammarat	1,509	42.3	435,299	289	2,032	0.20	199	91.8	48.3	32.8	7.2
Krabi	382	56.0	178,533	451	856	0.18	463	92.5	52.1	35.6	6.3
Phang-nga	317	69.1	91,928	381	525	0.13	205	97.5	61.3	34.0	4.5
Phuket	90	93.3	291,145	996	277	0.51	817	96.2	50.3	55.4	20.0
Surat Thani	937	39.8	428,722	453	1,743	0.14	85	94.6	63.9	41.2	10.6
Ranong	167	58.7	56,331	316	420	0.13	80	83.2	70.2	30.6	8.7
Chumphon	695	36.1	210,041	441	819	0.14	134	95.7	73.9	37.8	8.5
Songkhla	962	63.1	545,464	419	1,187	0.16	115	93.6	55.1	41.6	16.7
Satun	267	55.1	101,278	364	374	0.15	386	89.2	40.3	28.3	7.8
Trang	712	61.7	319,478	531	970	0.20	142	89.0	53.2	33.0	13.8
Phatthalung	654	45.6	187,354	374	772	0.23	116	93.8	43.9	31.4	10.3
Pattani	608	66.1	175,517	277	601	0.31	51	75.0	67.5	25.6	9.0
Yala	350	56.0	237,911	513	770	0.17	93	82.3	80.1	25.0	11.4
Narathiwat	566	62.9	217,112	310	830	0.19	19	82.0	76.4	22.5	4.1

See Annex III for data sources

Table AII.8 Participation

Location	Political participation		Civil society participation				
	Eligible voters 2005	Voter turnout 2005	Community groups 2005	Households participating in local groups 2005	Hours in social services and unpaid services to other households 2004		
	(number)	(%)	per 100,000 pop	(%)	Male	Female	Total
	1	2	3	4	5	6	7
<b>Kingdom</b>	<b>44,572,101</b>	<b>72.56</b>	<b>68</b>	<b>94.1</b>	<b>1.9</b>	<b>1.7</b>	<b>1.8</b>
<b>Bangkok</b>	<b>4,126,922</b>	<b>72.37</b>	<b>8</b>	<b>n.a.</b>	<b>2.7</b>	<b>2.3</b>	<b>2.4</b>
<b>Bangkok Vicinity</b>	<b>2,911,962</b>	<b>75.44</b>	<b>12</b>	<b>84.3</b>	<b>1.4</b>	<b>1.6</b>	<b>1.5</b>
Nakhon Pathom	575,192	80.82	20	90.6	2.0	2.0	2.0
Nonthaburi	697,383	74.96	4	84.3	1.1	0.8	0.9
Pathum Thani	560,620	76.05	13	77.6	0.8	1.9	1.8
Samut Prakan	761,886	71.96	12	89.7	1.2	1.0	1.1
Samut Sakhon	316,881	74.02	13	73.6	1.2	2.4	1.6
<b>Central Region</b>	<b>2,186,282</b>	<b>76.97</b>	<b>32</b>	<b>93.5</b>	<b>1.6</b>	<b>2.2</b>	<b>1.9</b>
Chai Nat	262,236	75.67	57	93.7	2.2	2.5	2.3
Phra Nakhon Si Ayutthaya	561,125	76.48	9	93.6	2.3	2.7	2.5
Lop Buri	558,660	74.34	41	94.3	1.2	2.3	1.8
Saraburi	421,254	80.99	27	89.9	1.1	2.0	1.7
Sing Buri	168,703	78.26	49	93.6	2.3	1.7	1.8
Ang Thong	214,304	77.77	36	97.2	1.3	1.3	1.3
<b>Eastern Region</b>	<b>3,088,263</b>	<b>75.50</b>	<b>74</b>	<b>89.6</b>	<b>1.7</b>	<b>1.7</b>	<b>1.7</b>
Chanthaburi	361,706	79.59	48	89.9	1.4	1.4	1.4
Chachoengsao	469,671	76.36	119	91.9	1.7	1.5	1.6
Chon Buri	820,208	73.61	8	82.5	1.8	1.3	1.7
Trat	152,120	74.47	245	89.1	1.0	1.5	1.2
Nakhon Nayok	186,273	77.21	205	89.4	1.9	2.6	2.0
Prachin Buri	325,172	76.38	40	96.0	1.8	1.7	1.7
Rayong	392,172	77.51	25	87.2	2.4	1.7	2.1
Sa Kaeo	380,941	71.40	132	96.6	1.7	2.6	1.9
<b>Western Region</b>	<b>2,599,240</b>	<b>76.80</b>	<b>54</b>	<b>92.1</b>	<b>1.6</b>	<b>1.9</b>	<b>1.8</b>
Ratchaburi	598,088	78.45	107	91.1	0.8	2.8	1.7
Kanchanaburi	540,180	74.60	38	92.5	1.3	1.0	1.2
Suphan Buri	626,989	76.92	20	92.5	2.3	2.0	2.2
Samut Songkhram	149,950	76.04	119	93.1	2.1	1.3	1.8
Phetchaburi	336,787	79.96	31	98.0	1.7	1.3	1.5
Prachuap Khiri Khan	347,246	74.43	42	85.9	1.4	1.9	1.6
<b>Northeastern Region</b>	<b>15,227,466</b>	<b>67.66</b>	<b>89</b>	<b>97.8</b>	<b>2.1</b>	<b>1.6</b>	<b>1.9</b>
Nakhon Ratchasima	1,851,362	72.16	64	95.8	3.4	1.9	2.4
Buri Ram	1,057,748	70.19	48	97.1	2.7	1.5	2.3
Surin	973,654	62.91	75	98.0	1.8	1.3	1.6
Si Sa Ket	1,027,438	65.22	64	98.7	1.2	1.4	1.3
Ubon Ratchathani	1,234,661	67.89	81	98.8	2.1	1.3	1.7
Yasothon	396,420	65.99	64	99.5	1.6	1.1	1.4
Chaiyaphum	820,371	68.44	64	97.0	1.6	2.0	1.7
Amnat Charoen	260,248	68.02	428	99.4	1.5	1.2	1.3
Nong Bua Lam Phu	346,850	62.63	107	98.6	2.1	2.0	2.0
Khon Kaen	1,260,540	70.98	56	98.1	1.8	1.7	1.8
Udon Thani	1,088,909	64.94	46	97.8	1.9	1.5	1.7
Loei	446,675	73.51	128	98.0	3.2	1.2	2.1
Nong Khai	624,542	62.55	53	96.8	3.0	1.8	2.4
Maha Sarakham	685,516	69.40	341	99.1	1.9	1.7	1.8
Roi Et	951,358	66.02	92	99.4	1.4	1.4	1.4
Kalasin	693,985	70.18	79	98.8	1.4	2.6	1.9
Sakon Nakhon	781,791	63.37	56	95.7	2.5	2.2	2.4
Nakhon Phanom	489,555	63.88	66	97.7	1.9	1.5	1.8
Mukdahan	235,843	70.43	277	98.2	1.4	2.0	1.6
<b>Northern Region</b>	<b>8,610,876</b>	<b>74.37</b>	<b>81</b>	<b>93.9</b>	<b>1.8</b>	<b>1.9</b>	<b>1.9</b>
Chiang Mai	1,141,118	82.66	71	91.8	1.6	1.9	1.7
Lamphun	313,379	86.56	93	96.9	2.3	3.0	2.6
Lampang	592,835	78.77	46	97.4	2.0	2.4	2.2
Uttaradit	353,628	71.92	78	96.4	1.1	2.1	1.6
Phrae	364,260	77.51	61	98.6	1.7	2.4	2.1
Nan	351,746	74.03	178	97.5	1.5	2.2	2.0
Phayao	372,550	74.30	96	98.1	2.1	3.4	2.7
Chiang Rai	825,346	74.33	128	96.8	2.7	1.6	2.1
Mae Hong Son	144,150	77.24	48	80.7	2.3	4.0	3.2
Nakhon Sawan	810,668	71.70	54	91.5	1.7	1.2	1.4
Uthai Thani	241,097	74.26	63	96.4	1.7	1.9	1.8
Kamphaeng Phet	533,473	67.65	62	91.0	0.8	1.2	1.0
Tak	308,968	73.88	42	81.8	2.5	2.1	2.3
Sukhothai	463,407	69.99	56	96.2	2.0	1.8	1.9
Phitsanulok	631,596	70.01	64	90.7	1.4	0.9	1.2
Phichit	425,670	68.83	212	92.8	1.3	1.5	1.5
Phetchabun	736,985	69.87	47	94.0	1.9	1.5	1.8
<b>Southern Region</b>	<b>5,821,090</b>	<b>76.28</b>	<b>84</b>	<b>89.6</b>	<b>2.0</b>	<b>1.5</b>	<b>1.8</b>
Nakhon Si Thammarat	1,074,904	70.67	52	87.5	2.3	1.4	1.9
Krabi	260,394	82.41	106	87.7	1.5	1.5	1.5
Phang-nga	171,301	79.92	233	91.7	1.8	3.7	2.4
Phuket	194,541	78.86	26	92.7	3.9	2.8	3.2
Surat Thani	659,745	76.65	35	87.6	1.4	0.9	1.2
Ranong	110,234	74.70	105	92.3	1.9	1.9	1.9
Chumphon	341,793	79.18	223	89.7	1.8	3.6	2.4
Songkhla	895,194	78.37	90	97.8	2.1	1.5	1.9
Satun	182,685	82.94	79	81.9	2.0	3.3	2.2
Trang	427,591	78.57	54	90.2	1.5	1.6	1.6
Phatthalung	363,263	78.66	100	92.4	2.0	1.2	1.7
Pattani	403,976	72.96	59	91.9	1.2	0.7	0.9
Yala	289,265	75.87	53	84.2	1.4	1.5	1.4
Narathiwat	446,204	73.59	122	82.7	0.8	1.0	0.9

See Annex III for data sources





# ANNEX

# III

## Data Sources

### Table All.0 Basic Data

Columns 1-3	<i>Key Registration Statistics 2005</i> , Registration Administration Bureau, Department of Local Administration, Ministry of Interior, December 31, 2004.
Columns 4-5	<i>Household Socioeconomic Survey 2004</i> , National Statistical Office.
Columns 6-7	Gross Domestic Product and Per Capital Income by Region and Province, National Account Division, Office of the National Economic and Social Development Board, 2004. (GPP at current prices)
Column 8	Royal Thai Survey Department, Royal Thai Army, 2004.
Column 9	Wildlife and Plant Conservation Department, Ministry of Natural Resources and the Environment. <b>Notes:</b> 1. Forest area in 2004 is an estimate from satellite image (LANDSAT-5) taken during 2003-2004, at the scale of 1:50,000. 2. 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	<i>Agriculture Census 2003</i> , National Statistical Office. (625 rai = 1 sq.km)
Column 11	Unclassified land = total land - forest land and farm holding land.
Column 12	Calculated from data on total population and provincial areas.

### Table All.1 Health

Column 1	Population mid year 2005 from Bureau of Policy and Strategy, Ministry of Public Health ( <a href="http://203.157.19.191/">http://203.157.19.191/</a> )
Column 2	Bureau of Policy and Strategy, Ministry of Public Health <b>Note:</b> 1. Underweight birth means a newborn weighing less than 2,500 gm.
Column 3	Bureau of Policy and Strategy, Ministry of Public Health <b>Note:</b> 1. Crude death rate per 1,000 population 2005 = (number of deaths in 2005/population mid year 2005) *1,000.
Columns 4-5	<i>Maternal and Children Health Report, October 2003-September 2004</i> , Department of Health (data from 71 provincial health offices) <b>Notes:</b> 1. Infant Mortality = (number of deaths of infants less than 1 year old/ number of live births)*1,000. 2. Maternal Mortality = deaths of pregnant women or mothers within 42 days after the end of the pregnancy that are related to the pregnancy or delivery. 3. Maternal Mortality Rate = (number of maternal deaths/number of live births)*100,000.
Columns 6-7	Department of Health, Ministry of Public Health. <b>Notes:</b> 1. Sexually transmitted diseases includes syphilis, gonorrhoea, chancroid, lymphogranuloma venereum, non-gonococcal urethritis. 2. Data coverage was 80.59% in 2004; some provinces failed to report the data. 3. Calculation of STD per 100,000 population is based on population mid year 2004 from Bureau of Policy and Strategy, Ministry of Public Health.

Columns 8-10	<p>Reported cases per 100,000 by province, September 1984 - July 31, 2004, Department of Disease Control, Ministry of Public Health. (<a href="http://epid.moph.go.th/epi31.html">http://epid.moph.go.th/epi31.html</a>)</p> <p><b>Notes:</b> 1. Total number of AIDS patients from 1984 to 2004 not excluding patients who passed away.</p> <p>2. Calculation of AIDS incidence is based on population mid year 2004 from Bureau of Policy and Strategy, Ministry of Public Health.</p>
Columns 11-13	<p><i>Health and Welfare Survey 2005</i>, National Statistical Office</p> <p><b>Note:</b> 1. Interviewees were asked whether they had any illness or were sick during the one-month period prior to the interview.</p>
Column 14	<p>Department of Mental Health, Ministry of Public Health (<a href="http://www.dmh.go.th/report/population/province.asp?field24=2548">http://www.dmh.go.th/report/population/province.asp?field24=2548</a>)</p> <p><b>Notes:</b> 1. Mental illness includes cases of schizophrenia, anxiety, depression, mental retardness, epilepsy, drug-addiction, other mental illnesses, attempted suicide.</p> <p>2. Data include only those who seek health care.</p> <p>3. Population by province from Registration Administration Bureau, Department of Local Administration, Ministry of Interior.</p>
Columns 15-23	<p><i>Cigarette Smoking and Alcohol Drinking Behaviour Survey 2004</i>, National Statistical Office.</p> <p><b>Notes:</b> 1. The survey covers population aged 11 and over.</p> <p>2. Smokers include regular smokers and occasional smokers.</p> <p>3. Alcohol drinkers include those who drink every day, 3-4 times/week, 1-2 times/week, 1-2 times/month, and occasionally.</p>
Columns 24-29	<p><i>Disability Survey 2002</i>, National Statistical Office.</p> <p><b>Notes:</b> 1. The survey covers 31 categories of disability.</p> <p>2. The survey covers population aged 13 and over.</p> <p>3. Impairment and chronic illness extends over a six-month period.</p>
Columns 30-34	<p><i>Health Resources Report 2004</i>, Bureau of Policy and Strategy, Ministry of Public Health. (<a href="http://203.157.19.191/">http://203.157.19.191/</a>)</p> <p><b>Note:</b> 1. Includes all public and private health personnel and resources.</p>

## Table AII.2 Education

Columns 1-3	Calculated from <i>Labor Force Survey, Quarter 3/2005</i> , National Statistical Office.
Columns 4-13	<p>Calculated from <i>Labor Force Survey, Quarter 3/2005</i>, National Statistical Office</p> <p><b>Notes:</b> 1. Upper secondary level includes general education, vocational/technical and teacher training.</p> <p>2. Diploma level includes academic education, higher vocational/technical education and teacher training.</p> <p>3. University level includes academic education, higher vocational/technical education and teacher training.</p>
Columns 14-22	<p>Education Information Center, Office of Permanent Secretary, Ministry of Education</p> <p><b>Notes:</b> 1. Number of students includes total number of students under various authorities, education year 2005 (data compilation on 12 July 2006).</p> <p>2. Population by age group, sex, and province as of December 2005 is from Department of Local Administration, Ministry of Interior (<a href="http://www.dopa.go.th/hpstat9/people2htm">http://www.dopa.go.th/hpstat9/people2htm</a>).</p>

- Columns 23-25 National Assessment Test 2004 , Office of the Basic Education Commission, Ministry of Education.  
**Notes:** 1. The national assessment test for primary level in 2004 includes Thai, mathematics, science, English.  
 2. The national assessment test for lower secondary level in 2004 includes Thai, mathematics, social studies, science, English.  
 3. The national assessment test for upper secondary level in 2004 includes Thai, mathematics, social studies, physics and biology, English.
- Columns 26-28 Education Information Center, Office of Permanent Secretary, Ministry of Education, 2005  
**Note:** 1. Figures for upper secondary education exclude vocational/technical students.

### Table All.3 Employment

- Columns 1-19 *Labor Force Survey, Q3/2005*, National Statistical Office.  
**Notes:** 1. The survey covers population aged 15 years and over.  
 2. Current labor force = employment + unemployment.  
 3. Unemployment rate = (unemployment/current labor force)\*100.  
 4. Underemployment rate = (underemployment/employment)\*100.
- Columns 20-21 Insured persons by provinces as of December 2005 from the Research and Development Division, Office of the Social Security Fund ([www.sso.go.th/knowledge/link/statisticsmid9.html](http://www.sso.go.th/knowledge/link/statisticsmid9.html))  
**Note:** 1. Percentage of insured workers = number of total insured workers/ current labor force calculated from the Labor Force Survey, Q3/2005.
- Columns 22-24 Occupational injuries by provinces from the Office of the Workmen's Compensation Fund, 2005, the Social Security Office.  
**Note:** 1. Occupational injuries per 1,000 workers covered by Workmen's Compensation Fund.

### Table All.4 Income

- Columns 1-10 *Household Socioeconomic Survey 2002 and 2004*, National Statistical Office.  
**Note:** 1. Household income changes not adjusted by inflation rate.
- Columns 11-13 Calculated by the Office of the National Economic and Social Development Board from Household Socioeconomic Survey 2004.

### Table All.5 Housing and Living Environment

- Columns 1-11 *Household Socioeconomic Survey 2004*, National Statistical Office  
**Notes:** 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 molded latrine-private.
- Columns 12, 14 Department of Disaster Prevention and Mitigation, Ministry of Interior.
- Columns 13, 15 Calculation is based on population at 31 December 2005 from Registration Administration Bureau, Department of Local Administration, Ministry of Interior.
- Columns 16-17 Calculated by combining the percentages in columns 13 and 15.
- Column 18 *Basic Minimum Needs (BMN) 2005*, Community Development Department, Ministry of Interior.

## Table All.6 Family and Community Life

Columns 1-10	<i>Labour Force Survey, Q3/2005</i> , National Statistical Office. <b>Notes:</b> 1. Elderly is defined as a person aged 60 and over. 2. Single headed household means that the status of the household head is either widow, divorced or separated.
Columns 11-12	<i>Elderly Survey 2002</i> , National Statistical Office. <b>Notes:</b> 1. Elderly is defined as a person aged 60 and over.
Column 13	<i>National Rural Development 2C (Khor Chor Chor 2 Khor), 2005</i> , Community Development Department, Ministry of Interior.
Columns 14-16	<i>Labour Force Survey, Q3/2005</i> , 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 homework.
Columns 17-18	Crime Statistics of Thailand 2005, Royal Thai Police. ( <a href="http://www.police.go.th">www.police.go.th</a> ) <b>Notes:</b> 1. Calculation is based on population at 31 December 2005, Registration Administration Bureau, Department of Local Administration, Ministry of Interior.

## Table All.7 Transport and Communication

Columns 1-2	<i>National Rural Development 2C (Khor Chor Chor 2 Khor), 2005</i> , Community Development Department, Ministry of Interior. <b>Note:</b> 1. Figures in column 1 represents number of villages covered by the data collection.
Columns 3-4	Land Transport Management Bureau, Department of Land Transport <b>Notes:</b> 1. Vehicle means all types of vehicles under the Motor Vehicle Act (not including buses and trucks and non-motorized vehicles). 2. Calculation is based on population at 31 December 2005 from the Registration Administration Bureau, Department of Local Administration, Ministry of Interior.
Columns 5-6	Department of Disaster Prevention and Mitigation, Ministry of Interior and Bangkok Metropolitan Authority <b>Notes:</b> 1. Includes highways and rural roads. 2. The figure for Bangkok is for 2006 and does not include those under the supervision of the Bangkok Metropolitan Authority ( <a href="http://www.bmn.go.th/yota">www.bmn.go.th/yota</a> ).
Column 7	Bureau of Research and International Cooperation, Department of Disaster Prevention and Mitigation, citing the Royal Thai Police.
Columns 8-9	<i>Household Socioeconomic Survey 2004</i> , National Statistical Office
Columns 10-11	<i>ICT Survey (Household), Q3/2005</i> <b>Note:</b> 1. The survey covers population aged 6 years and over.

### Table All.8 Participation

Columns 1-2	<p>Result of General Election for Members of House of Representatives, 6 February 2005, Election Commission of Thailand, 2005.</p> <p><b>Note:</b> 1. Including only party list candidates.</p>
Column 3	<p>Community Organization Development Institute.</p> <p><b>Notes:</b> 1. Community groups include community business, occupational, cultural/local wisdom, community welfare, environmental, financial, community media, social network and partnership groups.</p> <p>2. Calculation is based on population at 31 December 2005 from the Registration Administration Bureau, Department of Local Administration, Ministry of Interior.</p>
Column 4	<p><i>Basic Minimum Needs (BMN) 2005</i>, Community Development Department, Ministry of Interior.</p>
Columns 5-7	<p><i>Time Use Survey 2004</i>, National Statistical Office.</p> <p><b>Note:</b> 1. Time spent by population aged 10 years and over on community service and unpaid service provided to other households.</p>





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