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Explanatory notes

References to dollars (\$) are to United States dollars, unless otherwise stated.

References to “tons” are to metric tons, unless otherwise specified.

A solidus (/) between dates (e.g. 1980/81) indicates a financial year, a crop year or an academic year.

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The following symbols have been used in the tables throughout the journal:

An em-dash (—) indicates that the amount is nil or negligible.

A hyphen (-) indicates that the item is not applicable.

A point (.) is used to indicate decimals.

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INSTITUTIONS AND THE QUALITY OF GOVERNANCE: AN EMPIRICAL STUDY ON INTERSTATE DIFFERENCES IN ECONOMIC DEVELOPMENT IN INDIA

*Bharatee Bhusana Dash and Angara V. Raja**

Economic performance is closely linked to the existence of good institutions. However, the quality of governance has also been identified as an important factor that affects economic growth and development. This paper empirically examines the significance of these factors in explaining variations in the per capita GDP of the Indian states and the extent of industrialization across them. Towards this end, indices for institutions—such as the protection of property rights, the efficiency of the legal system at the state level and the rule of law—as well as indicators of the extent and quality of State intervention and political stability, have been constructed to bring them into an empirically testable format. Empirical findings suggest that the quality of governance is significant in explaining the variations in state per capita GDP. Institutional factors play a significant role in explaining variations in the extent of industrialization across the Indian states.

I. INTRODUCTION

A number of cross-country empirical works have shown the relative importance of institutions over other traditional measures, such as geographical proximity, historical advantage, physical capital, technical progress and human capital, in explaining the enormous differences in standards of living and growth rates across countries over a period of time (Scully and Slottje 1991; Barro 1991 and 1996; Knack and Keefer 1995 and 1997; Mauro 1995; La Porta and others 1999; Svensson 1998; Levine 1998; Hall and Jones 1999; Clague and others 1999;

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Aron 2000; Rodrik, Subramanian and Trebbi 2004). The protection of property rights, the enforcement of contractual agreements, economic freedom, efficient legal institutions and well-enforced rule of law have been recognized as preconditions for economic prosperity. The argument is that overall institutional structures determine the incentive pattern and economic pay-offs to agents. A well-maintained institutional set-up encourages economic actors to participate in fair and productive economic activities and discourages rent-seeking and illegal activities in an economy. Poor institutions create disincentives for economic agents to act productively and force the economy to a low-level equilibrium.

The literature that focuses on the role of a Government or State maintains that the interventionist activity of the State influences the economic outcomes to a considerable extent.¹ Broadly, the role of the State is viewed from two perspectives: the extent of State intervention in economic activities and the quality of governance. Governance broadly includes fiscal governance, as well, since it has an important role to play in deciding expenditures on both human developmental outcomes, such as health and education, and economic developmental outcomes, such as physical infrastructure. Interventions by the State are justified only if there are market failures that the State should address. Market failures associated with the provision of public goods and failures resulting in the control of “public bads”, such as pollution, have been the areas in which State intervention was justified. However, various necessary goods, such as health, education, sanitation and banking services, which, if left to the market, would exclude the marginalized sections of society, are also instances where State intervention is advocated.² The quality of governance can be judged by the enforcement of the rule of law, fiscal management, and expenditures on development-related activities.³ However, the views expressed by applied public choice theorists⁴ argue that the State, like private individuals and/or firms, also maximizes its own interests rather than social welfare. The argument is that the State acts as a “grabbing hand” rather than

¹ Reviewing the literature on the role of the State is an arduous task. Frequently cited works are Buchanan and Musgrave 1999, Stiglitz 1989b and 1998, and Tabellini 2005.

² This view was set forth most notably by Richard A. Musgrave and Joseph E. Stiglitz, both of whom have made a series of contributions to the literature. However, Musgrave (1959) and Stiglitz (1989) provide an overview of their contributions to the literature on market failure.

³ Many of the cross-country studies alluded to above show that a poor rule of law, corruption and weak contract enforcement mechanisms are associated with underdevelopment. The law and finance literature has documented the importance of financial development and fiscal management in promoting economic growth and development. For a compilation of this work, see Schaefer and Raja (2006).

⁴ Prominent contributions to the literature on public choice are provided by Downs (1957), Buchanan and Tullock (1962) and Olson (1965).

a “helping hand”; it redistributes and appropriates the wealth instead of generating and protecting it. Thus, due to its self-interested behaviour, if the Government were given policy powers that circumvented the market, it would fail to bring about effective economic development.⁵

The political institutions of a nation determine its economic outcomes indirectly by influencing economic institutions.⁶ A politically unstable society makes investments risky and uncertain by frequently changing the Government and its decisions. Political instability discourages investments and productive economic activities.⁷

To what extent do institutional differences, political stability and the quality of governance account for interstate variations in economic development across the states of India? This paper applies insights from the literature to answer this question. Towards this end, indices for institutions—such as the protection of property rights, the efficiency of the legal system at the state level and the rule of law—as well as indicators of the extent and quality of State intervention and political stability, are constructed to bring them into an empirically testable format. The study uses the standard ordinary least squares multiple regression technique to arrive at the results. The paper is organized as follows: The next section is devoted to a discussion of the literature on the role of institutions and the quality of governance in the subcontinent and on India, in particular, and identifies the gaps that this study attempts to fill. The third section contains the data and the methodology used. The fourth section contains the empirical analysis and the results. The fifth section discusses the robustness of the regression results. The sixth section contains the discussion of the results and the conclusion.

II. THE INDIAN AND REGIONAL PERSPECTIVE

Different institutional scholars have linked institutions with economic outcomes from different perspectives. Proponents of the new institutional economic literature, such as Douglas North, evaluate the role of institutions—particularly

⁵ The recent failures of some transitional economies exposed the dark side of State interventions. Kaufmann, Kraay and Zoido-Lobaton (2002) argued that the negative impacts of the rampant bureaucratic corruption and the interest group capture due to State intervention outweigh the positive impacts. See Frye and Shleifer (1997) for a detailed discussion.

⁶ Acemoglu, Johnson and Robinson (2001) discuss this at length.

⁷ Important cross-country empirical studies, such as Barro (1991), Alesina and others (1996), Brunetti and Weder (1998), and Svensson (1998), have evaluated the significance of different political aspects from the perspective of economic performances.

contract enforcement and the protection of property rights—from a historical point of view. North (1989 and 1990) argues that the institutions are country-specific and path-dependent, and subsequently, that they determine the level of future economic pay-offs of the country, whereas scholars such as Bardhan (2004 and 2005) are more concerned about the problems caused by the existing *dysfunctional institutions* and their persistence in underdeveloped countries. The problems of fragmentation and coordination failures are endemic in the underdeveloped countries, and these factors are responsible for the existence of dysfunctional institutions, and the presence of dysfunctional institutions retards the economic outcomes of these countries. Stiglitz (1989a, 1989b and 1998) questions the belief that the market as an institution can take care of all problems. He discusses various types of market failures, particularly in the poorer countries, and advocates the role of a proactive State to redress problems caused by market failures.

Given this background, it would be worthwhile to explore both the role of institutions and the role of the State in assessing the economic performance of the Indian states. This is one of the main objectives of the paper. The role of institutions in the Indian context has been mentioned under three broad categories: democracy, the rule of law and an independent judiciary. Viewed in this context, India emerges as an outlier in cross-country studies, with a reasonably strong institutional base but poor economic performance (Rodrik and Subramanian 2005). The quantification of institutions in India was undertaken in a study by Subramanian (2007) in which the rule of law, legal efficiency and customs administration were taken as indicators of institutional quality or institutional outcomes. Perception-based measures were taken from previous cross-country studies. The broad general conclusion is that the core institutions of democracy and an independent judiciary have created the preconditions for economic growth, but that India could embark upon this growth only after an attitude change in the Government towards a pro-business policy. Reference has been made to variations in institutional quality across Indian states, but they have not been tested statistically.

The vast differences in economic performance, growth rates and levels of economic and social development across different Indian states are well documented. For example, the per capita income of Gujarat is four times higher than that of Bihar. Development indicators, such as the index of industrialization, also show a large variation. The more important question of whether institutional quality and the extent and quality of government activity in promoting economic growth are significant factors in explaining the variation in economic performance across the Indian states has begun to gain the attention of scholars only recently. The literature on this topic is limited to two studies, one by Indicus Analytics (2004) and one by Debroy and Bhandari (2004). Various institutional indices, such

as corruption, the rule of law, property rights, and the difficulty of doing business, are calculated based on a perception survey. However, these studies have concentrated on ranking Indian states, and they compute the change in rankings in two discrete time periods to arrive at conclusions on the investment attractiveness of different states. Whether the indices explain the variations in the economic performance across states is not tested. This paper constructs institutional indices based on secondary data and uses statistical methods to test the hypothesis that institutions affect economic performance. In doing so, it ignores the problems that are associated with obtaining information that is perception-based.⁸ At the same time, it improves upon the previous study by testing the statistical significance of the hypothesis.

Fiscal governance plays an important role in fostering economic development. However, fiscal governance as measured by revenue and fiscal deficits is not a good indicator since it is not related to the level of development of the states. This is because poorer states which showed revenue surpluses and small fiscal deficits actually did so by sacrificing on development expenditures (Rao 2005).

Bhide, Chadha and Kalirajan (2005) refer to institutions in assessing growth spillovers across Indian states. However, the proxy for institutions that is used is the growth rate of state GDP itself. This is based on the assumption that richer states or those that have a higher growth are also the ones with better institutions. This may not necessarily be correct. In fact, the purpose of this paper is to test this very hypothesis.

At a broader regional level, no study has been conducted on the Indian subcontinent on country-specific institutions and economic performance. Some literature on fiscal aspects in Bangladesh argues that debt sustainability is an essential condition for macroeconomic stability and sustained economic growth. Often, high public debt can crowd out much-needed public spending and can generate adverse incentives that discourage private investors from engaging in activities that spur long-term growth (Islam and Biswas 2006). In this paper, an attempt is made to characterize fiscal governance based not on fiscal deficits but on the interest payments as a percentage of total expenditures. This would circumvent the problem alluded to by Rao (2005).

In conclusion, it may be stated that a study of institutions and economic performance across the Indian states has only been done with a view to ranking the Indian states and observing whether this ranking has changed over time. The

⁸ Aron (2000) discusses the problems of the perception-based indices at length.

method of using perceptual indices, however, has many problems associated with it and may not give an accurate picture. Second, the question of whether the perceptual indices correlate with the prevailing ideas on the institution-economic development linkage has not been studied so far. Using fiscal deficit as an indicator of fiscal governance would also show misleading results; hence, a different index is needed. This paper is an attempt to fill this gap and raise pertinent questions on the role of governance and the linkages between institutions and economic performance.

III. THE DATA AND METHODOLOGY

Seventeen major Indian states have been considered on the basis of their population. Major states are defined as those whose population is greater than 6 million as of the 2001 census. Delhi has been removed from the analysis, even though it satisfies the population criterion, because it is an outlier and drives the results very significantly. Furthermore, this paper has not included newly created states (i.e. Chhattisgarh, Uttaranchal and Jharkhand) in the sample, even though they also satisfy the population criterion, because other data were not available for the period of study.⁹ The selected Indian states account for more than 80 per cent of the entire Indian population and GDP. While formulating the institutional indicators, several variables were selected for each of them. To overcome the dimensionality problem, principal component analysis (PCA) was applied, resulting in four indicators. The details are given below.

The dependent variables:

- (i) *Per capita state gross domestic product.* This is an overall measure of economic development and is used routinely in many studies.
- (ii) *Index of industrialization.* This is a second index that was considered because the extent of industrialization has significant linkage effects that influence the level of development. It is measured as the ratio of the contribution of the secondary sector to total state GDP.

⁹ For the data source and the list of Indian states, see annex II.

Independent variables and hypothesized relationship for the economic performance analysis

Institutional indicators

(i) Index of creditors' property rights protection

Most of the cross-country studies have used indices prepared by international agencies, such as the International Country Risk Guide (ICRG) and Business Environment Risk Intelligence (BERI) indices. Other studies are based on variables constructed with the help of primary surveys. Further, Clague and others (1999) have used contract-intensive money (CIM) as a proxy for contract enforcement and property rights.¹⁰ Property rights are a bundle of rights over property. This paper has considered one of the aspects of property rights for the reasons given below.

- *Credit-deposit ratio of commercial banks across states.* The credit-deposit (CD) ratio has traditionally been used as a credit efficiency indicator and is regarded as an aggregative measure for gauging the effectiveness of the credit delivery system. However, the ratio is significantly influenced by the overall credit environment and banks' lending policies (India 2005, 77). Scheduled commercial banks have always had lower CD ratios as compared to new private sector banks and foreign banks operating in India. Given the fact that new private banks and foreign banks operating in India do not lend to the rural sector, the difference in CD ratios among the banks can be considered as reflecting the degree of risk that the banks face in lending. A perusal of the data across the Indian states on scheduled commercial banks shows considerable variation. This has been taken as an indicator of the differences in the degree of risk that banks face across different states in India. Therefore, it is used as a proxy that represents the protection of creditors' property rights.

(ii) Index of legal efficiency

This study has considered the average disposal of cases per court as a proxy to capture the efficiency level of the legal institution. A look at the data for this variable shows considerable spread over the states of India.

¹⁰ Contract-intensive money (CIM) is the ratio of non-currency money to the total money supply, or $(M2-C)/M2$, where $M2$ is a broad definition of the money supply and C is currency held outside banks. A higher CIM ratio indicates more economic activity.

- *Average disposal of cases per court.* A higher disposal rate reduces pendency and facilitates quicker results. Undue delays in deciding cases and the resulting high costs involved in using the legal system are common complaints in most low- and middle-income countries.¹¹ Such an environment is not conducive to the smooth functioning of the market since it often creates an environment of high risk for business and makes the reliance of firms on the market less secure. Generally, court injunctions pending a court verdict prevent productive activities and increase the number of man-days lost, which creates massive economic losses. An efficient legal institution with a quicker disposal rate of cases can help to avoid this kind of economic loss and improve economic outcomes. Hence, a higher disposal rate is expected to be positively related to the dependent variables in the regression analysis.

(iii) Index of rule of law

Usually, rule of law is a perceptual concept. For empirical purposes, many of the cross-country studies have used the rule of law indices prepared by international agencies (i.e. ICRG, BERI and the World Bank) on the basis of perceptions.¹² Due to the limitations of primary surveys, this study has made an attempt to capture rule of law on the basis of available proxies from secondary data sources.

- *Transmission and distribution (T & D) loss as a percentage of total generation.* T & D losses occur for two reasons: (a) loss due to technical reasons of transmission; and (b) loss due to theft i.e. illegal tapping of electric current from main transmission sources. Although the data on T & D losses do not distinguish between the two, losses due to technical reasons would be uniform across the states since the technology of generation and transmission of power does not vary significantly across the country. Hence, variations in T & D loss could be attributed to the second factor and are expected to be higher for poorer states, where the number of non-paying consumers is larger. The enforcement mechanism is

¹¹ North (1990) observes that societies that do not or cannot develop effective, low-cost enforcement are the cause of both historical and contemporary underdevelopment in the third world.

¹² See the cross-country empirical studies on the rule of law by Barro (1996), Sala-i-Martin (1997) and Kaufmann, Kraay and Zoido-Lobaton (2002).

too poor to prevent illegal electricity consumption.¹³ The probability of being caught is very low and people find that power theft is very easy and common. Hence, T & D loss can be used as a proxy for rule of law.

Extent and quality of State intervention

(i) Index of economic freedom

This index reflects the extent to which the State participates in economic activities in each Indian state.

- *Ratio of total expenditure to state gross domestic product (SGDP).* We have used the standard practice of measuring State intervention as the “ratio of total expenditure to SGDP”. The reason for the selection of this proxy is that it measures the degree of Government intervention in various economic activities. A higher ratio indicates more State intervention in the economy and there is a greater scope for corruption and other kinds of rent-seeking activities. Hence, *unnecessary* State interventions preclude productive activities and encroach upon the freedom of private individuals, subsequently creating stumbling blocks for economic prosperity.

(ii) Index of fiscal governance

Traditionally, maintaining the fiscal stability of the economy is one of the important functions of the State. A gloomy fiscal scenario fails to attract and create incentives for the private economic agents to participate in productive economic activities. For the index of fiscal governance, two variables are used.¹⁴

¹³ As per sample studies carried out by independent agencies, including The Energy and Resources Institute (TERI) in India, theft and pilferage account for a substantial part of the high transmission and distribution losses in India. The theft or pilferage of energy is mainly committed by two categories of consumers: non-consumers and bona fide consumers. Antisocial elements avail themselves of unauthorized or unrecorded power supply by hooking or tapping the bare conductors of line tap (LT) feeders or tampered service wires. Some of the bona fide consumers wilfully commit pilferage by damaging and/or creating disturbances to the measuring equipment installed at their premises.

¹⁴ Maintenance of the inflation rate, fiscal deficit, etc. at a lower level ensures fiscal stability. Since inflation rate data are available only at the country level, they are not applicable to the purpose of this study. We have ignored the data on fiscal deficit, because underdeveloped states of India maintain their fiscal deficit at a lower level by cutting short their development expenditures (Rao 2005). Hence, artificially maintained lower fiscal deficits across major Indian states would skew the results.

- *Interest payments as a percentage of total expenditure.* This is one of the components of non-development expenditure. If a considerable portion of total expenditure is devoted to the interest payments on debts, then fewer resources are left to spend on other kinds of development-oriented activities. A higher percentage shows that a state has high debt intensity and that its future generations will suffer from a massive debt burden.
 - *Revenue expenditure as a percentage of total expenditure.* Revenue expenditure is the spending resulting from the process of collecting revenues. A higher ratio indicates that more resources are devoted to generating the revenues, which is redistributive in nature rather than productive: less is available for the productive and development-oriented uses. It is indicative of inefficient resource utilization and poor fiscal management.
- (iii) Index of the State as a provider of necessary goods and services

There are many types of necessary goods and services, such as the provision of physical infrastructure and the protection of the vulnerable segments of society through the provision of basic social and economic goods and services which the market does not supply. Nevertheless, the supply of these goods and services plays a significant role in economic outcomes. Hence, the role of the State in facilitating these necessary goods and services and improving economic outcomes is well documented in the literature. In order to capture this index, three variables have been selected based upon the following arguments.

- *Ratio of surfaced (paved) roads to total roads.* This ratio represents the quality of road infrastructure; a higher ratio represents the maintenance of good transport facilities by the state and thus indicates that road transport is cheaper and quicker. In general, a developed infrastructure reduces the total transaction costs of an economy by saving time and minimizing transport costs, which attracts internal and external investment projects.
- *Percentage of the population accessing telephone connections.*¹⁵ An efficient telecommunications facility will reduce the costs of communication and will make transactions quicker and cheaper. Qualitative telecommunications services with Internet facilities will

¹⁵ The time period of the study is when the Government was still the dominant provider of telephone communications. The cell phone revolution and the entry of private providers came at a later date.

facilitate distant and sophisticated transactions and trades. They improve the information systems of a society and reduce physical transport to a considerable extent.

- *Per capita development expenditure.* Basically, development-oriented expenditure includes the expenditures on social services, economic services, rural development and irrigation, etc., which are very important from an economic point of view. Higher per capita development expenditure by a state indicates the degree of importance of development-oriented activities in that state's agenda. The idea is that a committed state would spend more on such social goods and services.

(iv) Index of political stability

Two variables are used in order to capture the political environment of major Indian states.

- *Number of times the President's rule was imposed.* The imposition of the President's rule indicates a poor political scenario in a state. Usually, the President's rule will be imposed when none of the political parties hold a majority or if the party in power fails to maintain law and order in the state. If this happens frequently, then a state will fail to attract economic investors to participate in economic activities and economic outcomes will always be suboptimal.
- *Number of times the Chief Ministers headed a coalition form of government.* The main problem with a coalition government is that it is not necessarily stable. The second problem is that unanimous decisions on important issues will take longer and be hard to come by. Different parties will be associated with different interest groups and will try to influence the government's decisions according to their concerned interests. Reversals of policies or frequent changes in policies can create an environment of uncertainty which can prevent desirable economic outcomes.

Common problems with cross-section analysis are multicollinearity¹⁶ and dimensionality. Principal component analysis (PCA) is used as a statistical tool to remove these problems. PCA is applied to those proxies which are highly correlated amongst each other. Since the units of measurement of correlated variables are

¹⁶ See annex I for table 1.1 of the correlation matrix (before applying PCA).

different, the correlation matrix is used in order to obtain the weights. Since a variable should not have an artificially higher weight due to its higher variance, the data are standardized with variance one (1) and mean zero (0) before applying PCA. Principal components having eigenvalues greater than one (1) are selected.¹⁷ Finally, four principal components are retained which have extracted 85.57 per cent of variance of the dataset. The obtained weights are multiplied by the corresponding standardized values of the variables to arrive at the indices.¹⁸ Since the proxy of the number of times the President's rule was imposed receives the highest weight in the first principal component, after multiplying it with the data on political stability and adding up, the resulting index is named the index of political stability. Similarly, the second principal component is the index of the State as a provider of necessary goods and services, and the third principal component, which has the highest weight to infrastructure, is the index of fiscal governance. The fourth principal component generates the index of economic freedom. After obtaining these four indices, the data are scaled in such a manner so as to generate a spread from -5 to +5. All indices are arranged on this scale to show that higher numbers represent better quality of institutions and governance. The purpose of using this homogeneous scale for all indices is to facilitate the ranking of the states in terms of the indices. The resulting four indices no longer have the problem of multicollinearity and can be used together in a regression equation. Since all the indices move in one direction, it is expected that economic performances are positively correlated. Hence, it is expected that the coefficient of all the indices would be positive.

IV. EMPIRICAL ANALYSIS AND THE RESULTS

Multiple ordinary least squares regression analysis is used to check the statistical significance levels of the indices and to explain the variations in the economic performances across major Indian states. Before regressing our objective indices over economic performance, we regressed the subjective institutional indices prepared by a previous study (Indicus Analytics 2004) over the same parameters of economic performance. Significantly, none of the subjectively calculated institutional indices explain the variations in the economic outcomes across the Indian states and, moreover, few of the indices appeared with wrong signs in the regression.¹⁹

¹⁷ See table 1.2 in annex I for the results obtained after applying PCA.

¹⁸ See table 1.4 in annex I. In the table, the indices of the extent and quality of State intervention are obtained after using PCA, whereas the institutional indices are prepared from the raw data.

¹⁹ Since the subjectively calculated institutional indices do not explain the economic outcomes of the Indian states, we have not reported the regression results. However, details of all unreported results in the paper are available from the authors upon request.

The estimated regression results, after regressing our objective institutional indices over the economic performance indicators, are displayed in table 1.

Table 1. Regression results

Sample size: 17 (t-ratio in parentheses)				
Independent variables ↓	Dependent variables →	Per capita income Index of industrialization		
		Model 1	Model 2	Model 3
Index of legal efficiency		0.100 (0.635)	0.954 (1.635)	1.042* (1.957)
Index of creditors' property rights protection		0.043 (0.849)	0.489 (0.741)	–
Index of rule of law		-0.263 (-0.742)	1.056** (2.334)	1.025** (2.489)
Index of political stability		0.278* (2.063)	0.892** (2.208)	0.933** (2.507)
Index of the State as a provider of necessary goods and services		1.110*** (7.478)	1.249** (2.803)	1.471*** (4.883)
Index of fiscal governance		0.465** (2.544)	1.691*** (3.082)	1.906*** (4.623)
Index of economic freedom		0.115 (0.442)	-0.175 (-0.409)	–
Intercept		10.676*** (40.473)	22.096*** (29.912)	22.097*** (29.951)
R-squared		0.949	0.876	0.868
Adjusted R-squared		0.910	0.779	0.808
F-statistics		24.025***	9.073***	14.496***
Degrees of freedom		F (7,17)	F (7,17)	F (5,17)

Notes: Probability level: *p< 0.10, **p< 0.05, ***p< 0.01.

After regressing the indices over SGDP growth rate, obtained R², adjusted R² and F-statistics are too poor to adjudge the model as a good model. Except the intercept term, none of the independent variables emerged as significant in the equation. Probably, growth rate has a lot to do with macroeconomic variables such as investment and saving, rather than with the quality of State intervention and governance. Hence, regression results of SGDP growth rate are not reported in this paper.

The regression model with state per capita income has a very high explanatory power²⁰ and, since the adjusted R^2 is also very high, it is a good fit model (See model 1 in table 1). On the whole, one may argue that the indices explain almost 95 per cent of the variation in per capita income across the major Indian states. In this model, the index of rule of law appears with the wrong sign, but the level of significance is far from the acceptable level. The value of the coefficient of the index of the State as a provider of necessary goods and services is high. The major finding of this model is that the quality of State intervention and governance influences the per capita income level significantly, whereas the institutional indices do not. The governance indicator consists of the index of fiscal governance. Political stability is significant at the 10 per cent level, showing that there is a weak relationship between per capita income level and political stability. The picture is different when we look at the degree of industrialization across states.

After regressing our indices over the index of industrialization, two models (models 2 and 3 in table 1) which satisfy all the criteria of a good fit model are retained. All the indices have the expected signs except the index of economic freedom. However, the level of significance of economic freedom is very weak and is not significant. The levels of significance of the quality of State intervention and governance are much higher than the institutional indices. Surprisingly, the index of creditors' property rights protection appeared as an insignificant variable in the model, even though it is of the expected sign.²¹ However, the rule of law index and the index of political stability are significant at the 5 per cent level. Hence it can be concluded that these two institutional variables exert a considerable influence on the level of industrialization of a state. The efficiency of the judiciary and its impact are significant, although at a 10 per cent level of significance, suggesting that legal efficiency does have an effect.

V. ROBUSTNESS OF THE RESULTS

The regression results do not ensure the direction of causality (i.e. problem of endogeneity). There could be the problem of reverse causality, which means that developed Indian states may be developed because they are spending more

²⁰ This is, of course, partly due to the fact that the number of observations is rather small. The analysis could be extended if we obtained data for the whole region.

²¹ The property rights index that was prepared for a report to the Twelfth Finance Commission (Indicus Analytics 2004) was also tried with the dependent variables. In neither of the cases did it turn out to be statistically significant.

on setting up the necessary institutions.²² In order to confirm the direction of causality, we have regressed our indices over the previous period's development indicators.²³ The time period of our indices is from 1997-1998 to 2001-2002 and we regressed our indices on the development indicators of the time period from 1993-1994 to 1996-1997. Since the value of the regression coefficients based on the new data set are not larger than the original ones, it could be concluded that our results are robust and causality does not run from the developmental indicators to our indices. Moreover, our results do not suffer from heteroscedastic problems.²⁴

VI. DISCUSSION OF THE RESULTS AND CONCLUSION

From the results it could be concluded that institutions do play a role in explaining the variations in economic performances across Indian states. Institutions play a significant role in explaining the variations in the extent of industrialization across Indian states but not in the case of variations in per capita GDP. Would this mean that institutional reforms are unimportant? This might seem to be a paradox since the Indian states that have a higher index of industrialization are also the ones with a higher per capita GDP. However, if fiscal governance and the State as a provider of necessary goods and services are removed from the analysis, then property rights emerge as a significant factor but the explanatory power decreases considerably. This suggests that, while institutional factors play a part in affecting economic performance, they are overshadowed by the role and quality of State intervention, especially fiscal governance. Another reason could be that the index of property rights developed may not reflect the real situation. To see if a perception-based index of property rights protection performs better, we used the index constructed by Indicus Analytics (2004) and conducted the same test. It turns out that the index, even when regressed alone with the data, does not turn out to be statistically significant. We conclude that the former explanation is a more valid reason for the results.

²² Helliwell (1994) finds that Gastil's civil liberties and political freedoms indices follow, rather than lead, changes in GDP.

²³ To deal with the problem of causality, Keefer and Knack (1997, 599-600) argue that "if causality operated only from growth to institutions, then regressions employing end-of-period values of the institutional indicators should produce larger coefficients than regressions relying upon older data."

²⁴ To check the problems related to heteroscedasticity, we calculated Huber/White sandwich robust standard errors and obtained roughly similar results. To make the paper less cumbersome, the regression results after undertaking causality tests and heteroscedasticity tests are not reported.

However, the institution of the rule of law does make a difference. On the question of whether the State acts in its own interests rather than in the interests of the people at large, we find that economic freedom is positively correlated with the level of development, but it is not statistically significant, suggesting that State intervention is not as predatory as it is sometimes made out to be. However, the State as a provider of necessary goods and services continues to play a very significant role in the economic performance of states in India. The other measure of the quality of governance, which has to do with fiscal governance, also plays an important role. States that spend on developmental expenditures have enjoyed a better level of economic development. The question of why the governments in some states have allocated a lower percentage of developmental expenditures cannot be answered by this analysis.

Lastly, political stability appears to have a dampening effect on economic performance. However, this is treated as an exogenous factor in this analysis and cannot be controlled by any policy.

From a policy perspective, it is clear that states must spend on developmental expenditures rather than on non-development expenditures. Investment in infrastructure by the state is still the single most important factor that would promote development. Institutional weakness would create problems in realizing the true potential of such efforts and must not be ignored. Better rule of law and faster disposal rates by courts would certainly have a positive effect. The judiciary in India has been appealing to the Government of India to allocate more money in the budget to the development of infrastructure related to legal institutions. At present, India spends a mere 0.2 per cent of the total budget on the judiciary. Other institutional reforms that strengthen property rights protection would depend upon which aspect of property rights plays a significant role in fostering economic development. This topic is left as an area for further research.

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ANNEX I

Table 1.1. Correlation matrix (before using the principal component analysis (PCA))

	CM_COALI	PRS_RULE	INTEREST	REV_EXPE	SRF_ROAD	TELE_HH	PER_DEVE	TOT_EXPE	CD_RATIO	AVG_DISP	TD_LOSSE
CM_COALI	1.000										
	-										
PRS_RULE	0.678 (0.003)	1.000									
	-										
INTEREST	-0.263 (0.308)	-0.390 (0.122)	1.000								
	-										
REV_EXPE	-0.277 (0.282)	-0.213 (0.411)	0.540 (0.025)	1.000							
	-										
SRF_ROAD	0.228 (0.378)	0.151 (0.563)	-0.197 (0.449)	0.539 (0.026)	1.000						
	-										
TELE_HH	-0.477 (0.053)	-0.393 (0.118)	0.236 (0.362)	-0.058 (0.824)	-0.545 (0.024)	1.000					
	-										
PER_DEVE	-0.006 (0.982)	0.048 (0.853)	-0.564 (0.018)	0.002 (0.993)	0.520 (0.033)	-0.254 (0.326)	1.000				
	-										
TOT_EXPE	-0.336 (0.187)	-0.199 (0.444)	0.575 (0.016)	0.419 (0.094)	-0.314 (0.220)	0.558 (0.020)	-0.531 (0.028)	1.000			
	-										
CD_RATIO	0.407 (0.105)	0.182 (0.484)	-0.114 (0.664)	-0.385 (0.127)	-0.140 (0.591)	-0.392 (0.120)	-0.017 (0.948)	-0.461 (0.063)	1.000		
	-										
AVG_DISP	-0.051 (0.847)	-0.115 (0.661)	0.191 (0.462)	-0.077 (0.769)	-0.041 (0.874)	-0.318 (0.213)	-0.018 (0.945)	-0.029 (0.912)	-0.111 (0.671)	1.000	
	-										

Table 1.1. (continued)

	CM_COALI	PRS_RULE	INTEREST	REV_EXPE	SRF_ROAD	TELE_HH	PER_DEVE	TOT_EXPE	CD_RATIO	AVG_DISP	TD_LOSSE
TD_LOSSE	-0.239 (0.356)	0.020 (0.938)	0.499 (0.041)	0.215 (0.406)	-0.468 (0.058)	0.417 (0.096)	-0.394 (0.117)	0.477 (0.053)	0.003 (0.990)	-0.105 (0.688)	1.000 –

Note: Figures in parentheses represent probability levels.

Abbreviations: CM_COALI, number of times the Chief Ministers headed a coalition form of government; PRS_RULE, number of times the President's rule was imposed; INTEREST, interest payments as a percentage of total expenditure; REV_EXPE, revenue expenditure as a percentage of total expenditure; SRF_ROAD, ratio of surfaced roads to total roads; TELE_HH, percentage of population accessing telephone connection; PER_DEVE, per capita development expenditure; TOT_EXPE, ratio of total expenditure to state gross domestic product (SGDP); CD_RATIO, credit-deposit ratio of commercial banks across states; AVG_DISP, average disposal of cases per court; TD_LOSSE, transmission and distribution (T & D) loss as a percentage of total generation.

Table 1.2. Weights assigned after applying PCA

Variables ↓ Principal components →	First component	Second component	Third component	Fourth component
Number of times the President's rule was imposed	0.50937	0.12012	0.28461	0.07193
Number of times the Chief Ministers headed a coalition form of government	0.42678	0.06668	0.26620	0.24015
Interest payments as a percentage of total expenditure	0.42724	0.06664	-0.12100	0.52643
Revenue expenditure as a percentage of total expenditure	0.18683	0.14909	0.52994	-0.31792
Ratio of surfaced roads to total roads	-0.17461	0.09645	-0.25614	0.08276
Percentage of population accessing telephone connection	-0.16315	0.59681	0.35154	0.16970
Per capita development expenditure	-0.42713	0.60008	0.40365	0.31942
Ratio of total expenditure to SGDP	-0.21577	-0.47791	0.44782	0.61446
Statistics				
Eigenvalues	2.62496	1.80910	1.43723	1.07424
Percentage of variance extracted	32.81	22.61	17.97	12.18

Abbreviation: SGDP, state gross domestic product.

Table 1.3. Correlation matrix (after using PCA)

	LEG_EFFI	PR_RIGHT	RULE_LAW	POL_STAB	STA_INFR	FIS_GOVE	FREEDOM
LEG_EFFI	1.000 –						
PR_RIGHT	0.174 (0.504)	1.000 –					
RULE_LAW	-0.215 (0.407)	-0.167 (0.522)	1.000 –				
POL_STAB	0.394 (0.117)	0.314 (0.219)	-0.337 (0.186)	1.000 –			
STA_INFR	0.310 (0.226)	0.481 (0.051)	0.343 (0.178)	0.214 (0.409)	1.000 –		
FIS_GOVE	-0.382 (0.130)	0.336 (0.187)	-0.349 (0.169)	0.020 (0.940)	-0.361 (0.155)	1.000 –	
FREEDOM	-0.135 (0.605)	0.431 (0.084)	-0.238 (0.358)	-0.019 (0.942)	-0.096 (0.715)	0.359 (0.157)	1.000 –

Note: Figures in parentheses represent probability levels.

Abbreviations: LEG_EFFI, index of legal efficiency; PR_RIGHT, index of creditors' property rights protection; RULE_LAW, index of rule of law; POL_STAB, index of political stability; STA_INFR, index of the State as a provider of necessary goods and services; FIS_GOVE, index of fiscal governance; FREEDOM, index of economic freedom.

Table 1.4. Indices by state

States ↓ \ Indices →	LEG_EFFI	PR_RIGHT	RULE_LAW	POL_STAB	STA_INFR	FIS_GOVE	FREEDOM
1. Uttar Pradesh	-0.41	-1.81	1.91	-5.00	-1.97	1.22	-3.33
2. Maharashtra	-0.59	3.98	-2.21	1.18	1.93	1.86	0.45
3. Bihar	-2.25	-2.68	2.49	-2.39	-5.00	-1.03	1.10
4. West Bengal	-2.51	-0.59	0.76	-1.15	-1.61	3.07	-0.52
5. Andhra Pradesh	0.99	1.56	-2.42	1.32	-1.00	2.73	1.24
6. Tamil Nadu	0.17	5.00	-1.44	2.15	0.60	2.11	2.42
7. Madhya Pradesh	-1.13	0.16	0.51	1.23	-2.58	1.98	2.06
8. Rajasthan	-1.39	-0.47	-0.25	-0.43	-1.35	2.90	-0.28
9. Karnataka	-0.67	1.15	-1.46	1.05	1.76	-0.19	3.07
10. Gujarat	5.00	1.89	1.38	1.24	3.73	-1.00	1.31
11. Orissa	0.21	-1.74	-2.73	-2.73	-3.09	-0.50	-0.24
12. Kerala	1.34	0.75	2.38	-2.83	4.25	-5.00	-0.80
13. Assam	-0.45	-2.07	0.04	-0.91	-3.38	-1.29	2.53
14. Punjab	-1.92	-0.18	3.00	-1.44	4.86	-1.60	-1.55
15. Haryana	0.20	-1.12	-1.21	0.81	2.61	-0.07	1.42
16. Jammu and Kashmir	2.67	-2.59	-5.00	3.88	-3.09	-2.01	-4.03
17. Himachal Pradesh	0.76	-1.22	4.26	3.92	3.37	-3.14	-5.00

Abbreviations: LEG_EFFI, index of legal efficiency; PR_RIGHT, index of creditors' property rights protection; RULE_LAW, index of rule of law; POL_STAB, index of political stability; STA_INFR, index of the State as a provider of necessary goods and services; FIS_GOVE, index of fiscal governance; FREEDOM, index of economic freedom.

ANNEX II

VARIABLES, DATA SOURCES AND TIME PERIOD

Table 2.1. Variable list for the index of economic freedom

<i>Variables</i>	<i>Data sources</i>	<i>Years</i>
1. Total government expenditure as a percentage of SGDP	India, <i>State Finances: A Study of State Budgets</i> (Mumbai, Reserve Bank of India, 2003)	1998-2002

Abbreviation: SGDP, state gross domestic product.

Table 2.2. Variable list for the index of political stability

<i>Variables</i>	<i>Data sources</i>	<i>Years</i>
1. Number of times the President's rule was imposed	D.D. Basu, <i>Introduction to the Constitution of India</i> , 19 th edition reprint (New Delhi: Wadhwa and Company, 2004)	1998-2002
2. Number of times a coalition government was formed	India, <i>Statistical Reports on General Elections to the State Legislative Assemblies</i> (New Delhi: Election Commission of India (ECI), 1998-2002)	1998-2002

Table 2.3. Variable list for the index of fiscal governance

<i>Variables</i>	<i>Data sources</i>	<i>Years</i>
1. Interest payments as a percentage of total expenditure	India, <i>State Finances: A Study of State Budgets</i> (Mumbai, Reserve Bank of India, 2003)	1998-2002
2. Revenue expenditure as a percentage of total expenditure	India, <i>State Finances: A Study of State Budgets</i> (Mumbai, Reserve Bank of India, 2003)	1998-2002

Table 2.4. Variable list for the index of the State as a provider of necessary goods and services

<i>Variables</i>	<i>Data sources</i>	<i>Years</i>
1. Surfaced roads as a proportion of total roads	India, <i>Statistical Abstract India 2003</i> , Ministry of Statistics and Programme Implementation (New Delhi, Controlled Publications, 2004)	1998-2002
2. Percentage of households that have access to a telephone	India, <i>Census of India 2001</i> , Office of the Registrar General (New Delhi, Ministry of Home Affairs)	2001
3. Per capita development expenditure	India, <i>State Finances: A Study of State Budgets</i> (Mumbai, Reserve Bank of India, 2003)	1998-2002

Table 2.5. Variable list for creditors' property rights protection

<i>Variables</i>	<i>Data sources</i>	<i>Years</i>
1. Credit-deposit ratio of scheduled commercial banks per 1 000 population (in tens of millions of rupees)	India, <i>Report on Trend and Progress of Banking in India</i> (Mumbai: Reserve Bank of India, 2002).	1998-2002

Table 2.6. Variable list for the index of legal efficiency

<i>Variables</i>	<i>Data sources</i>	<i>Years</i>
1. Average disposal rate of cases per court	India, <i>Annual Report 2001-02</i> (New Delhi, Ministry of Law, Justice and Company Affairs)	1998-2001

Table 2.7. Variable list for the rule of law

<i>Variables</i>	<i>Data sources</i>	<i>Years</i>
1. Percentage of transmission and distribution (T & D) losses	India, <i>Annual Report (2001-02) on the Working of State Electricity Boards & Electricity Departments</i> , Power and Energy Division (New Delhi, Planning Commission, May 2002)	1998-2001

Table 2.8. Variable list for development and growth indicators

Variables	Data sources	Years
1. Per capita income	India, <i>State Finances: A Study of State Budgets</i> (Mumbai, Reserve Bank of India, 2003)	1998-2002
2. SGDP growth rates	India, <i>State Finances: A Study of State Budgets</i> (Mumbai, Reserve Bank of India, 2003)	1998-2002
3. Index of industrialization	India, <i>State Finances: A Study of State Budgets</i> (Mumbai, Reserve Bank of India, 2003)	1998-2002

Abbreviation: SGDP, state gross domestic product.

Table 2.9. Serial number of states (as per size of population)

1. Uttar Pradesh	7. Madhya Pradesh	13. Assam
2. Maharashtra	8. Rajasthan	14. Punjab
3. Bihar	9. Karnataka	15. Haryana
4. West Bengal	10. Gujarat	16. Jammu and Kashmir
5. Andhra Pradesh	11. Orissa	17. Himachal Pradesh
6. Tamil Nadu	12. Kerala	

PUBLIC HEALTH, URBAN GOVERNANCE AND THE POOR IN BANGLADESH: POLICY AND PRACTICE

Ferdous Arfina Osman*

As is the case elsewhere in Asia, urbanization is growing at a rapid pace in Bangladesh. With the increased urbanization, the basic amenities of life are not expanding for the urbanites. Rather, the increased populations have been exerting continuous pressure on the existing limited facilities. The poor, who constitute a large portion (45 per cent) of the urban population, are the principal victims of this predicament and are significantly disadvantaged in access to basic services, particularly public health services. Urban governance has yet to be efficient enough to deal with this urgent issue. The country still lacks adequate policy direction for urban public health and the management of existing services is also quite inefficient. This paper attempts to identify the weaknesses of urban governance that result in the poor having inadequate access to public and primary health services by reviewing the existing policies and institutional arrangements for the provision of services and by examining the extent to which they are put into practice in terms of ensuring access to these services for the urban poor. Thus the study seeks to identify the inadequacies of the policies and practices contributing to the lack of primary and public health services for the urban poor. It draws on the findings of an empirical study conducted in four slums of the capital city of Bangladesh.

I. INTRODUCTION

In recent times, the world has been witnessing rapid urbanization; it is even more rapid in developing countries. According to projections by the United Nations, rapid urbanization of the Asia-Pacific region will continue and, by 2025, the majority of the region's population will live in urban areas (ESCAP 2007, para. 5). In South Asia, the percentage of the population living in urban areas is

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increasing and, as a part of this trend, Bangladesh is urbanizing at a rapid pace. Though the country is rural, a national daily notes that 27 per cent of its population lives in urban areas ("The costs of urbanization", *The Financial Express* (Dhaka), 1 July 2007) and the urban population has been growing at over 3.5 per cent annually (CUS, NIPORE and MEASURE Evaluation 2006, p. 13). The national census conducted in 2001 showed that, over the previous 10 years, the population in urban areas of the country had grown by 38 per cent, compared with only 10 per cent in rural areas (Bangladesh 2003). Hossain (2003, p. 2) notes that, in 1974, only 7.86 per cent of the total population lived in urban areas. This figure had reached 20.15 per cent by 1991, and it is anticipated that the urban population will reach 36.78 per cent by 2015. A projection in the National Water Management Plan also shows that, in the next 30 years, the urban population of Bangladesh will outnumber the rural population and the density of the already overly dense population will increase tremendously (Bangladesh 2005b, p. 10).

In Bangladesh, rural poverty, river erosion and better employment opportunities in urban areas are the reasons that an increased number of rural people move to the cities. The additional rural migrants exert tremendous pressure on the already scarce urban utility services and other amenities of urban life, resulting in a lack of access to basic services relating to primary health and public health services, such as water, sanitation, waste disposal and food safety. In Bangladesh, only 72 per cent of the urban population has access to the water supply (Bangladesh 2005b). No urban area except Dhaka (the capital city) has a conventional sewerage system and only 20 per cent of the population of Dhaka is served by the sewerage network; only 50 per cent of the solid waste generated in urban areas in Bangladesh is collected daily, leaving the remaining waste scattered on the streets and causing environmental pollution (Asian Development Bank 2008).

The urban residents least able to compete for such limited supplies are the poor, who constitute nearly 45 per cent of the urban population (CARE 2005). As they do not have the resources to make alternative arrangements to meet their basic needs, they are almost excluded from access to public health services, including pure water, sanitation, food safety and waste disposal. In urban areas, the poor mostly live in a damp, crowded and unhygienic environment. They are highly vulnerable to environmental hazards and to various infectious and non-infectious diseases, while access to primary health services remains excessively poor.

Impoverishment continues due to a lack of serious concern for the urban poor at the national level. Policy lacks a clear-cut direction regarding urban public health and the urban poor. The legal basis for public health services in urban areas is provided through various local ordinances, the execution of which is very

poor. Urban local bodies, called city corporations¹ and municipalities or *pourashavas*,² are mainly responsible for managing public health services in urban areas but they are ill-equipped to provide the required services. In addition to the local bodies, various central Government organizations, private entities and non-governmental organizations (NGOs) are also engaged in the provision of primary and public health services. Despite the existence of multifarious service provisions, access to these services for the urban poor is grossly inadequate due mainly to poor governance.

This paper seeks to identify the weaknesses of urban governance that cause the urban poor to have inadequate access to primary and public health services. Data were collected from both primary and secondary sources for the study, which draws on the findings of a primary research project sponsored by the Asian Development Bank that was carried out in four randomly selected slums in Dhaka city in June 2008. Primary data were collected through observation (of the living conditions of the slum poor) and by interviewing 60 households from the selected slums, while secondary data were collected by reviewing relevant legislation, policy documents and related literature.³

The discussion is organized into six sections. The first two sections illustrate the nature of the urban governance of primary and public health services, including water, sanitation, waste disposal and food safety, through a review of existing policy and relevant legislation and the institutional arrangements for their implementation. The next two sections focus on the nature of policy implementation in practice by illustrating the nature of urban poverty in Bangladesh and the extent of access the urban poor have to primary and public health services. Based on these illustrations, the penultimate section pinpoints the policy and institutional weaknesses contributing to the limited access of the urban poor to the existing services. The final section of the paper concludes the study and puts forward certain recommendations for improving the situation which have implications for the Asian region at large.

¹ Large cities are called city corporations.

² Smaller cities are called *pourashavas* or municipalities.

³ The author and the team collected the primary data.

II. PUBLIC HEALTH IN URBAN BANGLADESH: THE POLICY FRAMEWORK

This section illustrates the legal provisions of urban health services as articulated in the health policy document and the relevant legislation.

According to the Universal Declaration of Human Rights, everyone has the right to a standard of living adequate for health and well-being (United Nations 1948, art. 25), and it is always the responsibility of government to ensure it no matter how daunting the problems of delivery may be (World Bank 2003). Likewise, the provision of basic health services is a constitutional obligation of the Government of Bangladesh. Article 15 of the Constitution (Bangladesh 2004) stipulates that it shall be a fundamental responsibility of the State to ensure the provision of the basic necessities of life, including food, clothing, shelter, education and medical care. Again, article 18 of the Constitution asserts that the State shall raise the level of nutrition of its population and improve public health as its primary duties. The National Health Policy of Bangladesh was first adopted in 2000 and has recently (2008) been revised. It reaffirms the constitutional obligation of providing basic medical services to people of all strata (article 15) and improving the level of nutrition and public health (article 18). The policy also aims to develop a system to ensure the easy and sustained availability of health services to the people, especially communities in both rural and urban areas. It aims to reduce the degree of malnutrition among people, especially children and mothers, and to implement an effective and integrated programme to improve the nutritional status of all segments of the population. It aims to undertake programmes to control and prevent communicable diseases and reduce child and maternal mortality rates to an acceptable level and to improve overall reproductive health resources and services.

The principle of the policy is to ensure health services for every citizen and the equal distribution of available resources to solve urgent health-related problems, with a specific focus on the disadvantaged, the poor and the unemployed. To ensure the effective provision of health services to all, the policy adopts a primary health care strategy and adheres to the principle of facilitating and encouraging collaborative efforts between governmental and non-governmental agencies. NGOs and the private sector will be encouraged to perform a role complementary to that of the public sector in the light of governmental rules and policies. The policy also adopts the strategy of integrating the community and local government with the health service system at all levels.

Thus the priorities of the policy include the following:

- Providing health services for all, particularly the poor and disadvantaged
- Improving maternal and child health services
- Ensuring adequate nutrition for mothers and children through targeted programmes
- Preventing and controlling communicable diseases
- Engaging in public-private partnerships

To support the execution of these policy statements, legislation has been promulgated from time to time, but there is no specific legal provision relating to urban health care. Various city corporation and *pourashava* ordinances deal with urban health issues. The *Pourashava* (Municipality) Ordinance of 1977, the city corporation ordinances of 1982 and 1983 and the recently revised local government (city corporation and *pourashava*) ordinances of 2008 have all clearly assigned urban local government institutions with responsibilities regarding the provision of health services for their residents (Bangladesh 2008). As per the 2008 ordinances (schedules II and III), the city corporations and the *pourashavas* will be responsible for the provision of a wide range of primary and public health services, including the removal, collection and management of garbage; the prevention of infectious diseases; the establishment of health centres, maternity hospitals and dispensaries; and water supply, drainage and sanitation.

The Penal Code of 1860 ensures food safety, stipulating that anyone involved in the adulteration of food or drink and sales of such products shall be punished by imprisonment for a term of up to six months, or by a fine of up to 1,000 taka,⁴ or both. The legislation also prohibits the sale of adulterated drugs. Later, the Pure Food Ordinance of 1959 was promulgated with provisions for food safety for the citizens of all urban areas. The Bangladesh Standards and Testing Institution Ordinance was promulgated in 1985 to ensure food safety. The food policy of Bangladesh also aims to ensure the food safety of its population.

There is no specific regulation for waste management in Bangladesh. City corporation and *pourashava* ordinances provide the legal provisions for waste management in urban areas. The Bangladesh Environmental Conservation Act of 1995 provides for conservation of the environment, the improvement of environmental standards and the control and mitigation of environmental pollution.

⁴ Bangladeshi currency, \$1 = 69.35 taka (as of 19 February 2009).

Under the Act, the Department of Environment was formed under the Ministry of Environment, with the specific authority and responsibility to conserve the environment (waste management) and even to accept assistance from law enforcement agencies and other authorities as and when necessary.

The following section describes how public health services are being managed in urban areas in practice under the guidance of this policy and legislation.

III. URBAN GOVERNANCE AND PUBLIC HEALTH

Urban governance refers to the administration and management of functions and responsibilities mandated to local government institutions, private sector institutions, NGOs and civil society in urban areas. At the central level, the Ministry of Local Government and Rural Development plays a key role in urban governance, with a wide range of controlling authority over urban local government institutions.

Formally, urban local government is the sole authority managing urban public health services under the guidance of the above-mentioned policies and legislation. Two types of urban local bodies, known as city corporations and *pourashavas*, have massive public, environmental and primary health care mandates. They are both directly elected by the local people. Out of the 522 urban areas⁵ identified by the 1991 Census Commission (Bangladesh 1993), only 316 urban centres have local governments. The six large metropolitan cities (Dhaka, Chittagong, Rajshahi, Khulna, Barisal and Sylhet) enjoy city corporation status, while 310 small cities have *pourashava* status. The prime determining factors of city corporations include: population size, population density, the economic importance of the area and available infrastructure facilities. City corporations have a higher level of urbanization than *pourashava* towns and are large commercial and administrative centres. In urban centres with no local government, urban services are provided by field administration of the central Government. Centrally, the Ministry of Local Government and Rural Development is the supporting authority of the directly elected urban local bodies. Along with the Ministry of Local Government and Rural Development, the Ministry of Housing and Works and the Ministry of Health and Family Welfare also share responsibility for developing and providing urban infrastructure and water and sanitation services. In this regard, it is worth mentioning the roles of the Local Government and Engineering Department

⁵ As per the *Pourashava* Ordinance of 1977, an area can be declared as an urban area upon fulfilment of certain conditions, which include the following: three fourths of the adult male population of the area should be engaged in non-farm activities and the population of the area should be no less than 15,000, with an average density of not less than 2,000 inhabitants per square mile.

and the Water and Sewerage Authority (WASA) under the Ministry of Local Government and Rural Development and the Department of Public Health and Engineering under the Ministry of Health and Family Welfare.

In all urban areas except the two big cities of Dhaka and Chittagong, water supply and sanitation services are provided by the local bodies. According to the 1977 *Pourashava* Ordinance, it is obligatory for city corporations to ensure the availability of safe drinking water to households, while the provision and regulation of water supply and the prevention of infections are to be ensured by the *pourashava*. In the cities of Dhaka and Chittagong, a special government agency called the Water and Sewerage Authority (WASA) is the formal government authority providing drinking water and sanitation. Sometimes, WASA sets up water pumps in slum settlements in partnership with NGOs. Water is delivered through pipe connections to homes, public taps and tube-wells. Piped water supply systems have been installed in a limited number of *pourashavas*. The non-piped urban areas rely mostly on hand pump tube-wells (Bangladesh 2005b). Because of the high population density, coverage of sanitation in urban areas is worse than in rural areas. As mentioned before, only 20 per cent of the population of Dhaka city is served by a highly expensive sewer network; the rest uses septic tanks, pit latrines or no system at all (Bangladesh 2005b).

Garbage disposal in a fixed place is essential to ensure a hygienic environment. Local bodies are responsible for the removal, collection and disposal of solid waste in urban areas. Until recently, the conservancy section of the city corporations and *pourashavas* carried out waste management, including sanitation, cleaning and other associated functions, while the transportation of waste and other engineering functions were performed by another department. As that system weakened the chain of command, Dhaka City Corporation recently inaugurated a waste management department to perform all of the waste management functions in a combined manner under a single line of authority, but this approach has yet to be replicated in other urban areas across the country. In addition to the local government institutions, community-based microenterprise primary waste collection systems are well established across the urban areas of the country.

Public health largely depends on the safety and quality of the food supply. The Ministry of Industry sets the food safety and quality standard and the Ministry of Local Government and Rural Development is its key implementing agency. Sanitary inspectors of local bodies are responsible for the inspection of food manufacturing/processing and selling premises, as well as for the collection of food samples. There is only one food testing laboratory in the country for ensuring food safety; it is located in Dhaka city.

In urban areas, publicly provided primary health care facilities operate under the control of local government institutions. Almost all *pourashavas* have urban-based *upazila*⁶ health complexes and some *pourashavas* have district hospitals in their areas. Usually, these two facilities coordinate with each other as a single unit if they are in the same *pourashava*. In addition to these facilities, some *pourashavas* have specialized hospitals, such as tuberculosis and diabetic hospitals. In *pourashavas*, other than the government facilities, there are, on average, 2-15 private clinics, 1-4 NGO clinics and 2-20 diagnostic centres. In addition, there are 35 urban dispensaries across the country that provide primary health services, mainly to the urban poor. Many private for-profit and not-for-profit hospitals also provide health services in urban areas. Private hospitals are mostly located in big *pourashavas* or city corporations.

Despite the existence of all of these institutional arrangements and relevant policies and legislation, the urban poor are grossly deprived of adequate access to services. To provide insight into this deprivation, the following two sections depict the nature of urban poverty and the limited access of the urban poor to the existing services.

IV. URBAN POVERTY: EXTENT AND DIMENSIONS

The Asian region is urbanizing rapidly, and so is poverty, since urbanization is taking place without the desired level of development. Ravallion, Chen and Sangraula (2007) note that, although rural poverty has declined significantly in Asia, urban poverty rose from 136 million in 1993 to 142 million in 2002.

In Bangladesh, also, the rapid growth of urbanization is not commensurate with a high level of economic development; rather, it causes massive poverty in urban areas since adequate job opportunities are not created. Nearly 45 per cent of the urban population is living in poverty, while 25 per cent are extremely poor, consuming just 1,805 kilocalories per day (CARE 2005). According to the estimate

⁶ An *upazila*/subdistrict is an administrative unit in Bangladesh. The organizational structure of the country's public health-care system is in alignment with the country's administrative set-up. Bangladesh is divided into 6 divisions, 64 districts, 481 subdistricts/*upazilas*, 4,441 unions and 68,000 villages. Across the country, there are 300-500-bedded specialized tertiary hospitals at the divisional level, 50-200-bedded district hospitals that provide both inpatient and outpatient care at the district level, 31-bedded *upazila* health complexes at the *upazila* level for secondary care, and union health and family welfare centres at the union level that provide primary care services. In this institutional structure, *upazila* health complexes function as referral hospitals for primary level care and provide support services to primary health care. There are no union health and family welfare centres in urban areas, but urban dispensaries provide primary health services.

of the Bangladesh (2005c) Bureau of Statistics, the average monthly per capita income of the extreme poor is 741.52 taka (\$10.88).

It is even more alarming to note that, in Bangladesh, urban poverty is an increasing trend. Nationwide, the urban poor increased from 7 million in 1985 to 12 million in 1999 (Bangladesh 2003). About two decades ago, Anam (1993) estimated that, by 2020, the poor would comprise 40-60 per cent of the urban population. The existing trend of growing urban poverty is about to prove this estimate true. The increase of poor people in urban areas is resulting in the growth of a massive number of slums. Although slums are the most visible face of urban poverty, there are also many other poor people who live elsewhere. The urban poor can be broadly classified into two categories: a) slum dwellers and b) the floating population.

The majority of the urban poor are rural migrants (first or second generation migrants) who turn to slums for shelter. An operational definition of the term “slum” agreed upon by experts at a 2002 meeting of the United Nations Human Settlements Programme (UN-Habitat) is: “a contiguous settlement where the inhabitants are characterized as having inadequate housing and basic services” (UN-Habitat 2003, p. 10) (i.e. access to water, sanitation, security of tenure, durability of housing and sufficient living area) (UN-Habitat 2003, p. 12, table 1.2). It is estimated that 35.2 per cent of the total population of six cities in Bangladesh lives in slums, the largest concentration being in Dhaka, the capital, followed by other big cities: Chittagong, Khulna and Rajshahi (Bangladesh 2003). The total number of slums in six of the country’s cities is 9,048, of which 55 per cent are located in Dhaka. The slum population in Dhaka doubled from 1.5 million to 3.4 million between 1996 and 2005 (CUS, NIPOPT and MEASURE Evaluation 2006). The slums are mostly located in low-lying areas, marshes, sewage canals, riversides, railway tracks and embankments, which are generally prone to poor drainage systems and flooding. The slums are densely crowded and lack access to piped water, hygienic sanitation and basic civic amenities mainly due to the massive demand for the already scarce services. The scarcity of services has been intensified because of the unwillingness of the public and private sectors and NGOs to invest in slums due to the illegal nature of these settlements. Thus, living in an unhealthy environment with no basic facilities, the slum dwellers are further impoverished through sickness and malnutrition. Women and children are especially vulnerable to this poverty-induced ill health. The slum dwellers mostly have low-paid jobs in the informal sectors of the urban economy. There is a predominance of day labouring and rickshaw pulling among this poor group of city dwellers (Amin 1991), while females are mostly found in such occupations as maidservants, housewives and garment workers.

The second category of the urban poor lives on the pavements of the city streets and in bus stops, railway stations and parks, without the minimum basic amenities of life. These people are mostly known as the “floating population”, as they don’t stay in the same place for long. They are generally engaged in begging or some other kind of antisocial activity. There is hardly any data about the number of this type of poor. The majority of this category of urban poor are also rural migrants.

Of these two categories of urban poor, the slum dwellers are a bit more organized as a group than the floating population in terms of receiving health services from the existing facilities in a specific location. For this reason, the present study finds it appropriate to look at the slum dwellers in order to gain a fuller picture of the access of the urban poor to public and primary health services and to analyse the efficiency of urban governance in this regard.

V. ACCESS OF THE POOR TO HEALTH SERVICES

Accessibility is determined by the availability and affordability of services. Although the urban poor can manage most of the basic human services informally, by themselves, to survive, health services is the one area that is beyond their control (Riley and others 2007). Despite the fact that services are provided by various types of providers—public, private and NGO—access of the poor to these services is quite limited. On the other hand, their earnings are so low that expenditures for health care consume a negligible amount. The general tendency of the urban poor is to spend a higher proportion of their income on food and housing, while lower priority is given to health and education costs. The present section depicts the extent of the slum poor’s access to primary and public health services in the capital city of Bangladesh.

Respondents in the study were randomly selected. As mentioned before, 60 households (15 from each of four slums) were the key respondents. Although slums reflect urban poverty in a concentrated manner, all of those living in slums are not poor. Usually, the per capita income; socio-economic status, particularly the housing condition; and the possession of durable items inside the homes are popular methods of identifying the poor. The present study has considered these factors and the upper and lower poverty lines set by the *Household Income and Expenditure Survey* (Bangladesh 2005c) based on the cost of basic needs method as the basic criterion for identifying the poor. According to the *Survey*, in 2005, for the Dhaka metropolitan area, the per capita income of the poor at the lower poverty line was 820.26 taka (\$11.83) and that of the poor at the upper poverty line was 952.67 taka (\$13.74). The respondents of the present study fall both between the

two poverty lines and slightly above the upper poverty line, with a monthly average per capita income of \$14.42. Broadly, the respondents belonged to three occupational categories: self-employed (petty shopkeepers, beggars, vegetable vendors, tailors), day labourers (domestic help, rickshaw pullers, construction workers) and the working class (garment workers, car drivers, security guards, dairy farm workers). The average size of the households was five. The respondents lived in wooden *macha*, shacks, cutcha houses with bamboo fences and tin roofs, and semi-pukka houses with concrete walls and tin roofs. Data from the slum poor were collected through observation and interviews, which were also used to determine the socio-economic status of the households. The determinants of socio-economic status included occupation, income, household size, durable goods possessed and the type of ownership of the settlement (temporary or transient settlers were worse off than long-term settlers). A small-scale qualitative survey was conducted through in-depth, open-ended interviews. During the interviews, the respondents were asked about their sources of income, health care, drinking water and sanitation, food safety and the condition of their waste disposal. They were also asked why they had opted for specific sources of care and what problems they faced in availing themselves of those provisions.

Access to public health services

As a concept, public health refers to the broader and comprehensive view of health, as it means the promotion and protection of the health of the general public. Public health services are those that are provided to the general public by the government or NGOs to help them live a healthy life. A pure water supply, hygienic sanitation, waste disposal and food safety are significant among these services. The urban slums are the worst victims of the inadequate provision of these services, mainly due to the refusal of the authorities to install infrastructures in their informal settlements and also because of a high population density in a limited space.

Access to water

WASA is the formal government authority that provides drinking water and sanitation to the inhabitants of Dhaka city and to those of the second largest city, Chittagong. As the slum dwellers do not have a mailing address, they are not entitled to water supplied by WASA. They obtain water from WASA through an intermediary elite group or an individual living beside the slum or the slum welfare committee. This intermediary group supplies water to the slum poor at a rate higher than the actual price. However, in the study areas, the sources of water included hand pump tube-wells, WASA pumps, municipal piped water, water vendors

and water supplied by some other specific places, such as mosques. Of these sources, hand pump tube-wells connected to the WASA line were found to be the primary source of water. The distance of the water sources from the dwellings varied from 1 to 500 feet, while the time taken to reach them was from 2 to 10 minutes (see table 1).

Table 1. Distance of the water source (tube-well) from the household

<i>Distance (in feet)</i>	<i>Time taken to reach the source (in minutes)</i>	<i>Number of respondents</i>	<i>Percentage of respondents</i>
1-100	2-3	36	60
101-200	4-5	12	20
201-300	6-7	4	7
301-400	7-8	3	5
401-500	9-10	5	8
Total		60	100

Source: Calculations based on survey data collected by the author.

Table 1 shows that tube-wells, the prime source of water, are located within 1-100 feet of the household in the majority of cases (60 per cent), which means it takes 2-3 minutes to reach them. This means that 60 per cent of the slum dwellers in the survey can access water in 2-3 minutes. On the other hand, only 8 per cent of the slum dwellers need 9-10 minutes to reach the tube-wells.

Despite the existence of various sources of water, their number is quite insufficient. A recent study (Podymow and others 2007) found that from 5 to over 100 families in the study area shared one tube-well. The present study found that, in a good number of cases (47 per cent), one tube-well was shared by 76-110 households (see table 2). In one slum, there was only one hand pump tube-well, which was shared by 170 households.

In the case of rented rooms, the settlers had to pay the water bill (100 taka or \$1.44) with the rent and, in other cases, households had to pay 60-100 taka (\$0.87-\$1.44) per month for tap water. In one slum, it was found that people mostly used water from the nearby river for bathing, washing dishes and clothes, and other daily activities, as it was free.

Table 2. Pattern of tube-well sharing

Number of households sharing one tube-well	Number of respondents	Percentage of respondents
5-40	5	8
41-75	12	20
76-110	28	47
111-145	0	0
146-180	15	25
Total	60	100

Source: Calculations based on survey data collected by the author.

Box 1. Buying water limits access to water: The tale of Bibi Kulsum

Bibi Kulsum is a domestic helper. Her prime source of drinking water is tap water located 450-500 feet from her house. The source is shared by 70-80 households. She has to pay 80 taka (\$1.15) per month for drinking water but quite often she finds it unavailable. In cases when she cannot obtain water, she has to buy one vessel of water for 2 taka (\$0.03). For other purposes, e.g. washing clothes and utensils and cooking, she uses river water. When asked why she uses dirty river water for cooking instead of pure water, she replied, “How can I make you understand the sorrowful state of the poor like us? We often see excreta floating on the river water, till then we use this water as it costs nothing. For me, it is hard to buy drinking water, let alone buying water for cooking!!”

Source: Survey information and data collected by the author.

Access to sanitation

Slums are not connected to the WASA sewerage network. As for water services, slum welfare committees, NGOs and other intermediary groups construct toilets in slums. Most of these toilets are water-sealed or linked to septic tanks. For the maintenance of the toilets, people have to pay a fixed amount. Due to the cost, these latrines are not much preferred by the slum dwellers. Moreover, as the space for constructing toilets in slums is limited, they are also limited in number.

In the study areas, two types of latrines were found: water-sealed latrines linked to sewerage or septic tanks and hanging latrines. Hanging latrines are precarious bamboo platforms raised a few feet above the water and screened by rags or polythene, which is called a *tong*. The sludge from these latrines is

discharged straight into the pond below, causing a highly contaminated environment. Open fields and railway tracks are also used by children off and on.

Table 3 shows that 60 per cent of the respondents had access to the hygienic sanitary latrines, while the rest used hanging latrines, which are unhygienic. Latrines are not always very near to the households. Table 4 presents the distance of the toilets from the households. The closest distance ranges from 1 to 50 feet, while the greatest distance ranges from 251 to 300 feet. The encouraging finding is that the majority of people (73 per cent) had access to toilets within the lowest range (1-50 feet).

Table 3. Types of latrines used

Type of latrine	Number of respondents	Percentage of respondents
Water-sealed/linked to sewerage	36	60
Hanging latrine	24	40
Total	60	100

Source: Calculations based on survey data collected by the author.

Table 4. Distance of latrines from the household

Distance (in feet)	Number of respondents	Percentage of respondents
1-50	44	73.33
51-100	4	6.68
101-150	3	5.00
151-200	5	8.33
201-250	2	3.33
251-300	2	3.33
Total	60	100.00

Source: Calculations based on survey data collected by the author.

Although the majority of the respondents had access to hygienic latrines, they were shared by many households. Table 5 shows the latrine-sharing pattern in the selected slums, where a minimum of 8 and a maximum of 66 households shared one latrine. The table shows that less than half of the households (48 per cent) fell in the lowest range (1-15), while the larger portion of the households (52 per cent altogether) shared latrines with 16-75 households. This means that fewer people had better access to sanitation. Nine out of sixty households had separate hanging latrines of their own. All other households were sharing hanging latrines.

Table 5. Pattern of latrine sharing

<i>Number of households sharing one latrine</i>	<i>Number of respondents</i>	<i>Percentage of respondents</i>
1-15	29	48
16-30	4	7
31-45	16	27
46-60	0	0
61-75	11	18
Total	60	100

Source: Calculations based on survey data collected by the author.

Garbage disposal

A study by the Centre for Urban Studies, the National Institute of Population Research and Training, and MEASURE Evaluation (2006) notes that the majority of slums (55 per cent) do not have any fixed place for garbage disposal in their dwellings. Most of the respondents of the present study also reported that there was no fixed place for garbage disposal. Two out of four slums studied had fixed places for garbage disposal from where garbage was collected by the city corporation, but they mostly remained unutilized or under-utilized. Mostly, the slum dwellers threw their garbage in front of their houses or straight into the water under the *macha* or into the pond or river nearby. When asked about the place of garbage disposal, one of the respondents reluctantly showed the space in front of her house and said, "We have no fixed place for garbage disposal; we throw garbage here". She went on, adding that even children's excreta were also sometimes thrown right in front of the dwelling. Another respondent reluctantly said, "The entire place is like a dustbin; hence we do not need a fixed place for garbage disposal". Table 6 shows the garbage disposal practices in the selected slums studied.

The majority of people (38 per cent) threw garbage through the gaps of the wooden platform of the *macha* houses instead of disposing of it in any place set aside for garbage disposal (see table 6). The second most popular method (25 per cent) was to throw garbage in a place designated by the city corporation, while a good number (20 per cent) threw it in front of their dwellings. Garbage disposal practices largely depended on the location of the slum. If the slum was located near an open space, people preferred to throw garbage there, whereas if it was beside any marshy land, they opted for that. Even if there was a fixed place for garbage disposal, they preferred these open spaces, as it was easy and they were unaware of the consequences of being exposed to the garbage.

Table 6. Garbage disposal practices

Site of garbage disposal	Number of respondents	Percentage of respondents
Through the gaps of the wooden platform of the <i>macha</i> houses	23	38.34
Fixed place	15	25.00
In front of the dwelling	12	20.00
Hole	5	8.33
River	5	8.33
Total	60	100

Source: Calculations based on survey data collected by the author.

Box 2. Living with garbage!!

Altabanu, a housewife and inhabitant of Banshbari slum, lives in her two-room bamboo shack with seven family members, including her two minor sons. Her husband works in a dairy firm. She and her neighbours always throw garbage right in front of the house. Therefore, a heap of rubbish has accumulated just outside of her door, emitting an appalling smell. The family members (her in-laws and children) have no reaction to it. The in-laws were gossiping in bed with some guests, the elder son was eating rice and the younger son was playing. Asked whether the smell was always so terrible, she replied, “This has been normal to us. We don’t get any smell!!”

Source: Survey information and data collected by the author.

Food safety

Slum dwellers do not have much time to prepare food on their own, as they have to remain outside to earn a living for a significant portion of the day. Therefore, most of them depend on unsafe food of low quality purchased from small shops or vendors. The majority of the respondents of the present study reportedly ate food from street vendors. As is the case with the freshness or purity of food, people are also unaware of the consequences of eating food purchased from street vendors. Although many have expressed doubts about its freshness, the majority are rather indifferent about its freshness and are even reluctant to believe that such food can cause illness. Explaining the reason for eating unsafe food, a respondent said that it was cheaper to eat a purchased bun than making one at home and that the poor had to live with this food and shouldn’t be bothered about freshness or hygiene.

Table 7. Consequences of eating unhygienic/stale food

<i>Consequences of eating food from street vendors</i>	<i>Number of respondents</i>	<i>Percentage of respondents</i>
No idea ^a	36	60
Diarrhoea	14	23
Vomiting	5	8
Diarrhoea and vomiting	5	8
Total	60	100

Source: Calculations based on survey data collected by the author.

Note: ^a The respondents had encountered these diseases but were not sure whether they resulted from having eaten stale food.

Table 7 shows that the majority of people (60 per cent) did not have any idea about the consequences of eating unsafe food from street vendors. A good number of people (23 per cent) also admitted to having had diarrhoea, while 8 per cent reported vomiting and another 8 per cent reported having had both diarrhoea and vomiting caused by the purchased food.

Access to primary health care

Bangladesh has achieved impressive progress in some health indicators of the Millennium Development Goals, but there are gaps in the health conditions between the rich and the poor, and also between the urban poor and the rural poor. In fact, the deprivation of the urban poor is worse than that of the rural poor. The Ministry of Health itself admits that the health indicators for the urban poor are worse than those for the rural poor due to the unavailability of urban primary health care and poor living conditions (Asian Development Bank 2008, p. 181). Infant and child mortality rates in urban slums are higher than the national average figures. In urban slums, the infant mortality rate is 63 per 1,000 live births, while it is 29.8 in non-slum urban areas and the national rate is 52. Similarly, the contraceptive prevalence rate and the total fertility rate are higher in slums than in the non-slum urban areas (see table 8).

Table 8 illustrates the poorer health status of the slum dwellers compared to those living in non-slum areas, which gives an indication of the poorer access of the slum dwellers to health services.

The study finds a high prevalence of many communicable and non-communicable diseases among the slum dwellers during a period of six months preceding the study. The respondents reported fever (95 per cent), cough and

Table 8. Comparative health status in city slums and non-slum areas

<i>Health status indicators</i>	<i>City slum areas</i>	<i>Non-slum areas</i>	<i>National</i>
Contraceptive prevalence rate	58.1% (2006 Bangladesh Urban Health Survey)	62.7% (2006 Bangladesh Urban Health Survey)	55.8% (Bangladesh Demographic and Health Survey 2007)
Total fertility rate (15-49 years)	2.46% (2006 Bangladesh Urban Health Survey)	1.85% (2006 Bangladesh Urban Health Survey)	2.70% (Bangladesh Demographic and Health Survey 2007)
Antenatal care	62.3% (trained & non-trained practitioners) (2006 Bangladesh Urban Health Survey)	84.7% (2006 Bangladesh Urban Health Survey)	60.3% (Bangladesh Demographic and Health Survey 2007)
Facility-based delivery	12.3% (2006 Bangladesh Urban Health Survey)	46.7% (2006 Bangladesh Urban Health Survey)	15.0% (Bangladesh Demographic and Health Survey 2007)
Infant mortality rate (per 1 000 live births)	63.0% (2006 Bangladesh Urban Health Survey)	29.8% (2006 Bangladesh Urban Health Survey)	52.0% (Bangladesh Demographic and Health Survey 2007)

Sources: National Institute of Population Research and Training (NIPORT); MEASURE Evaluation; International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B); and Associates for Community and Population Research (ACPR), *2006 Bangladesh Urban Health Survey* (Dhaka and Chapel Hill, NC, USA, 2008).

National Institute of Population Research and Training (NIPORT), Mitra and Associates, and Macro International, *Bangladesh Demographic and Health Survey 2007* (Dhaka and Calverton, MD, USA, 2009).

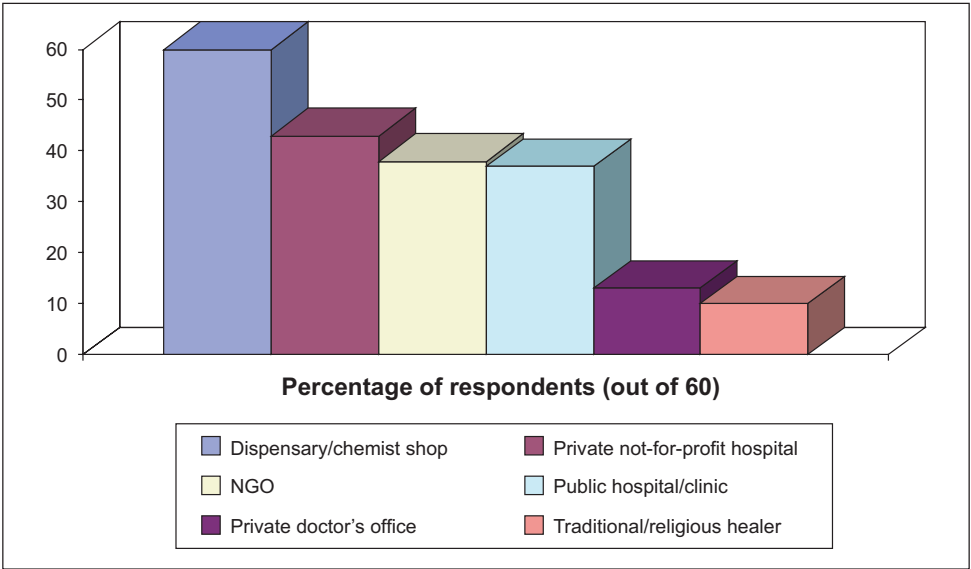
cold (57 per cent), diarrhoea (53 per cent), skin diseases (28 per cent), intestinal worms (17 per cent), rheumatic fever (17 per cent) and jaundice (10 per cent), although they were better protected from six preventable diseases through the Expanded Programme of Immunization. In the selected slums, nearly universal immunization coverage was found, as 91 per cent of the respondents reported that their children had been fully immunized, mainly by the city corporation. Although various types of curative services existed in the study areas, access of the poor to these services was quite limited. Access to services is examined here by eliciting the answers to questions such as: a) Where do slum dwellers go for the treatment

of their illnesses? b) Why are these facilities preferred? c) What is the behavioural pattern for seeking maternal and child health care in urban slums?

Where do slum dwellers go to seek treatment?

The present study finds that the treatment-seeking pattern of the urban poor depends on the severity of the illness. In the case of minor illnesses, they do not see any doctor. Only in the case of major illnesses do they opt for medically trained providers. Multiple sources of treatment were found in the study areas, including: dispensaries/chemist shops, private for-profit and not-for-profit clinics, public hospitals, NGOs and traditional/religious healers. Among these sources, public hospitals provided low-cost and low-quality services, while private not-for-profit hospitals provide low-cost but quality treatment to the poor. A World Bank (2007a) study notes that only 12 per cent of all urban poor report getting medical services from the government service centres. NGO services are also popular among the poor because they are cheap. In the selected slums, NGOs under the Urban Primary Health Care Project of the Ministry of Local Government and Rural Development provided free health cards to the poor, which entitled them to free medical care for simple ailments and delivery services during childbirth. Figure 1 presents the pattern of utilization of the facilities/providers by the poor.

Figure 1. Types of facilities chosen for treatment



Source: Calculations based on survey data collected by the author.

When asked about their first point of contact during an illness, 60 per cent of the respondents cited chemist shops as their preferred facility, making them the most popular choice for the treatment of diseases. The second most popular facilities, preferred by 43 per cent of the respondents, were private not-for-profit hospitals providing quality services at low cost. The NGO clinics were slightly preferred (38 per cent) over public hospitals (37 per cent). Some respondents also sought care from private doctor's offices (13 per cent) and traditional healers (10 per cent). In the case of minor illnesses (e.g. fever, cough and cold, stomach pain and diarrhoea), people usually opted for self-treatment by procuring medicine directly from a dispensary or went to traditional healers. NGO facilities or private low-cost hospitals were also visited for minor illnesses, but these facilities were usually visited when diseases were not successfully treated by the previously cited sources.

Why are these facilities preferred?

The choice of care was determined by various factors, which included proximity to the home, low cost, the reputation of the facility, referrals, less time required for care and personal beliefs. In all cases, the respondents mentioned more than one reason. Table 9 ranks the reasons for choosing the facilities/providers obtained from the respondents of the study.

Table 9. Reasons for choosing sources of care

<i>Reason</i>	<i>Number of respondents</i>	<i>Percentage of respondents</i>
Proximity to home	26	43.33
Low cost	20	33.33
Reputation of the facility	16	26.67
Referred by others	9	15.00
Refused by a facility	9	15.00
Saves time/simplicity	6	10.00
Personal belief in a provider	4	6.67
No serious illness	2	3.33
No faith in the public hospital	1	1.67

Source: Calculations based on survey data collected by the author.

Among the various factors, proximity to home is the most dominant one (43.33 per cent) influencing the choice of providers. A facility within walking distance was the first point of contact in most cases of minor illness. The second key factor was low cost (33.33 per cent). Some respondents mentioned more than one reason for choosing their providers. For instance, many respondents said that proximity, low cost and simplicity (no waiting time) were the main reasons for preferring their provider. These factors were influential, particularly in cases where services were sought from traditional/religious healers and chemist shops. NGO facilities were also preferred because of cost-free treatment. In the case of minor illnesses, though, the poor preferred traditional healers and chemists to NGO facilities, as visiting these providers was more convenient and less time-consuming. Although NGO facilities provide free services, the slum dwellers did not prefer them for minor illnesses, as the service hours (most often from 9 a.m. to 1 p.m.) conflicted with their working hours and, more importantly, waiting times were too long.

Maternal and child health: care-seeking pattern

The majority of the households (82.76 per cent) in the selected slums had their last children delivered at home, assisted by the elderly women in the family or in the neighbourhood, mostly mothers/sisters/mothers-in-law or untrained traditional birth attendants, because it was cheap (see table 10).

Table 10. Behaviour for seeking maternal health care

<i>Type of care</i>	<i>Number of respondents</i>	<i>Percentage of respondents (out of 58)^a</i>
Child delivery:		
At home	48	82.76
In a facility	10	17.24
Antenatal care (Frequency of visits to a health facility)	32	55.17
Post-natal care	8	13.79

Source: Calculations based on survey data collected by the author.

Note: ^a Two respondents had no children.

Cost is a key barrier to access of the poor to delivery in an institution. The study found a good number of women (55.17 per cent) having antenatal visits (1-3) during pregnancy, while the number of them opting for post-natal care was negligible (13.79 per cent). Family planning services were usually obtained from

four sources: chemist shops, NGO facilities, domiciliary health workers and the city corporation. Of these sources, the utilization of city corporation services was the least common (10 per cent), while NGOs were the most popular source (24 per cent) and chemist shops were the second most popular.

In urban slums, minor diseases of children are usually treated by nearby dispensaries/chemist shops or traditional healers. If they are not cured from these sources, then they are taken to hospitals or clinics. Children are usually taken to the hospital with end-stage complications, as the illiterate poor parents know little about the magnitude, distribution and risk factors of these illnesses. The consequences of these end-stage treatments are cost escalation and even, in some cases, the death of the child.

Thus, the urban poor are highly impoverished in terms of having access to public and primary health services. The following section describes how the various factors of urban governance contribute to this impoverishment.

VI. POLICY AND INSTITUTIONAL WEAKNESSES: CONSTRAINTS ON ACCESS TO HEALTH SERVICES

The preceding discussions demonstrate that the Government has a national health policy and, from time to time, various pieces of legislation relating to health have been promulgated. Furthermore, various types of public, private or NGO services (both targeted and non-targeted) exist, but their implications for the poor are quite limited, as various studies show that the health status indicators of the slum poor are significantly lower than those of the non-slum urban residents (see table 8). The present study also depicts a disquieting picture about the access of the urban poor to primary and public health services. All of these facts signal poor governance in the provision of public health services for the urban poor. Governance weaknesses causing inadequate access of the urban poor to primary and public health services are manifold, but they fit broadly into two categories: policy weaknesses and institutional weaknesses (in implementing the policy). This section attempts to identify the policy and institutional weaknesses causing inadequate access of the poor to the services provided.

Policy weaknesses

The policy weaknesses that cause the urban poor to have limited access to health services include inadequacies in policy content resulting in an inability to address urban health issues properly.

In the health policy arena, public health has not been considered a priority issue. In the National Health Policy, the term “public health” has been referred to in a vague manner without any clarification. The policy has a narrow focus on health issues, as it has stressed the importance of primary health and maternal and child health services to achieve its objective of improving public health, without adequately emphasizing the improvement of water supply, sanitation, food safety and solid waste management.

Another weakness of the existing policy is that it lacks a specific policy objective or principle regarding the health of the urban poor. The policy has a clear bias towards rural areas, as national statistics indicate that that is where the majority of the poor and disadvantaged inhabitants of the country live. At the same time, a significant portion of the urban population is poor, their number is increasing, and they live in more unhygienic conditions than their rural counterparts. These realities have yet to receive due attention in the national policy. On the whole, the policy objectives are too broad to have a specific impact on urban health.

In 2008, the health policy was revised by the non-party caretaker Government, paying attention to the health of the urban poor for the first time. It proposed to adopt an urban health sector strategy with the help of the Local Government Division of the Ministry of Local Government in order to ensure primary health, family planning and reproductive health services for the urban poor. In addition, it also proposed to undertake steps to revise and update the laws related to food safety and emphasized proper hospital waste management. The revised policy was left unapproved by the previous Government. Currently, the newly elected Government has also expressed its intention to revise the health policy soon, the outcome of which has yet to be seen.

In addition to the health policy document, there are many acts and regulations that provide the legal basis for public and primary health services in urban areas. However, the majority of these regulations are outdated and, for some public health issues, there is no regulation at all.

The absence of any act, regulation or guideline regarding waste management creates a serious vacuum in the case of waste disposal. In the absence of a policy or any specific legislation, the local bodies cannot set the requirements, standards or guidance for developing their waste management services and infrastructure. The city corporation and *pourashava* ordinances of 2008 that regulate waste management in urban areas have no specific article regarding the involvement of NGOs or other community-based organizations in waste management and their rights to collect revenue to cover the cost of the

services provided. Although the ordinances have provided for the delivery of services by public-private partnerships, in practice, they have failed to encourage adequate private sector participation, as the rights, responsibilities and incentives for participation have not been specified (Asian Development Bank 2008).

Institutional weaknesses

Besides the policy inadequacies, the lack of implementation of the policy and legislation due to institutional weaknesses is another aspect of poor governance. As the local bodies are the key implementing agencies, the effectiveness of public health services is closely influenced by their leadership quality and managerial capacity. Most of the local government institutions lack the capacity required to implement the policy, legislation and associated programmes. The following institutional weaknesses cause the poor to have limited access to public health services:

Local bodies lack vision

In Bangladesh, urban local government bodies have yet to have visionary leadership, mainly because they lack autonomy. Local bodies are not financially independent and they have no autonomy in decision-making. They are financially dependent on grants from the central Government, as locally mobilized resources (mainly from property taxes) are often insufficient even for their basic operation, let alone for public services. Thus, local bodies depend on the centre for policies, plans, financial resources, human resources and even for budgetary decisions, which severely restricts the creativity and innovativeness of local leaders. Moreover, local leaders lack adequate knowledge and proper training to become visionary with regard to the socio-economic development of their locality. In most cases, the local government functionaries act as agents of the Government to execute its decisions. This state of local government has been continuing since the country's independence in 1971, and the situation remains unchanged. Although the present Government in its election manifesto pledged to create a strong and autonomous local government by decentralizing power to the *upazila* (subdistrict) level through the formation of elected bodies, since assuming power, it has been retreating from its promises. Such locally elected bodies have been formed, but they have been kept non-functional as controversy has arisen over the Government's decision to retain central control over local affairs by granting power to the members of the parliament to interfere in local level development activities, which the elected local leaders are not ready to accept. To empower the lawmakers to intervene in the functioning of the newly elected *upazila* parishads (councils), the parliament also recently passed the *Upazila Parishad Act* of 2009. According to this law, the

parishads are not allowed to send development plans to the Government without recommendations from the lawmakers (S. Liton, "Upazila Parishad law goes against SC [Supreme Court] verdict", *Dhaka Daily Star*, 19 April 2009). Thus, visionary local leadership is still far from a reality in Bangladesh.

Lack of adequate authority of local bodies

Although the *pourashavas* and city corporations are formally autonomous, in reality, their autonomy is quite limited. The city corporation and *pourashava* ordinances of 2008 empower the elected local bodies to plan, implement, operate and maintain public health infrastructure and services without providing adequate financial and human resources and the required authority. The World Bank (2007b, p. 109, para. 5.25) explains the lack of authority of local bodies in this way: "Local autonomy is further stifled by the fact that local governments have little or no choice on the staffing, nor do they have control over the wages for their employees. Further, key personnel at the local levels are central Government employees with limited accountability to residents". The administrative operations of local bodies, including the daily implementation and management of their budgets, are also subject to the rule-making authority of the central Government (2008 *Pourashava Ordinance*, section 146; 2008 *City Corporation Ordinance*, section 157). Due to these weaknesses, local bodies fail to perform their assigned functions properly.

Inadequate budgetary allocations for local bodies

According to the city corporation and *pourashava* ordinances, local bodies are supposed to spend 8 per cent of their budget on public health and 1 per cent on primary health care. However, in practice, they spend only 4 per cent of the total budget on public health and less than 0.5 per cent on primary health care. The reduced expenditure on public health and primary health care is perhaps due to the lower priority placed on public health in the national health policy document and partly because local bodies have scarce resources. As mentioned earlier, local bodies are heavily dependent on central Government grants and the internal revenues raised are not sufficient to perform their functions. Funds are often disbursed at a reduced level and the disbursement usually specifies the areas on which funds are to be spent. At this point, infrastructure development and road maintenance usually take priority over public and primary health services. The processing of tax returns and the collection of taxes by local bodies is at least ten times less than is required for the efficient management of public services (Asian Development Bank 2008). Although holding taxes account for two thirds of the total tax revenue, they are collected inconsistently, as people have a tendency to evade taxes and the tax administration is not efficient enough to raise a fixed amount of tax regularly. Externally funded projects for primary health care in

urban areas are also scant. There is no dedicated project targeted towards public health care, in general, and towards urban primary health care, in particular, except the Second Urban Primary Health Care Project. Finally, as a wide variety of functions compete for limited resources, public health receives a lesser allocation (as a lower priority issue). Usually, a major portion of the revenue earned is spent for staff salaries and benefits. In fiscal year 2006/07, for instance, 63 per cent of the revenue earnings of Dhaka City Corporation was spent for employee salaries and allowances (Asian Development Bank 2008).

Inadequate human resources

The manpower of the local bodies is quite inadequate to perform the functions assigned to them. A large number of vacancies in both city corporations and *pourashavas* is common. For instance, although the *Pourashava* Ordinance of 1977 has a provision for a slum improvement officer in *pourashavas*, the position has yet to be introduced. Although the Pure Food Ordinance of 1959 provides for the appointment of a public food analyst by the local bodies, in practice, they do not yet have such staff. In addition, many important positions, such as health officer or chief executive officer, are often vacant. Moreover, the existing human resources of local government institutions are not adequate to provide public health services to city dwellers. For instance, Dhaka City Corporation has only two posts for food and sanitation officers, four posts for health inspectors and four posts for sample suppliers in its food and sanitation branch, which is quite inadequate to manage the huge task of food safety and quality control in Dhaka city (Asian Development Bank 2008).

Lack of monitoring

Although in urban areas, various community-based organizations and private associations are involved in the provision of health services, sanitation services and waste management, their jobs are not monitored effectively and they are not accountable to the local bodies or to the Local Government Division of the Ministry of Local Government and Rural Development.

Lack of coordination

Public health is a complex issue with multisectoral mandates. It involves the functioning of various ministries, including the ministries of local government, environment, health, food, commerce, and housing and works. These ministries are performing their public health functions in an uncoordinated manner, which often causes an overlap of functions and services. There is no common platform to coordinate the activities of all of these ministries. Due to a lack of coordination,

the roles and responsibilities of different ministries with regard to health are not clearly delineated and, consequently, resources are not allocated in an effective manner. Although local government institutions are the key implementing agencies of public health programmes, they are not strong enough to coordinate their functions with the relevant ministries. A wide range of private organizations and NGOs supplement government functions, but they are not working in a coordinated manner, either. The activities of these NGOs are not properly linked with the *pourashava* activities. The absence of an integrated sectoral approach to manage urban health services is the reason for this lack of coordination.

Inefficiencies and weaknesses of the institutions providing health-care services

Despite the existence of some targeted programmes for the poor—for instance, free or subsidized health cards provided by NGOs and subsidized low-cost services at public hospitals and not-for-profit private hospitals—the poor do not have adequate access to them. The prime causes include the following: public sector and NGO services are not always cheap for the poor because they often still have to buy medicine (in most cases, it is not provided for free) and make many informal payments (in the form of “tips”) at the facilities; the institutions are not poor-friendly; the poor are not fully aware of the entitlements of the NGO health cards; and waiting times are long, which leads to a loss of working hours when visiting the health facility.

The present study finds that cost is a major barrier preventing the poor from accessing services. Low cost attracts the poor to public hospitals (mostly as the last resort), but varieties of informal payments and the negligence and poor attitudes of providers towards the poor cause them to lose confidence in the facilities and, ultimately, poor patients feel discouraged from utilizing the services. One respondent commented: “Health services are not for the poor. It is rather something that the rich can manage (through money or power)”. The lack of poor-friendly services at the facilities is another major factor impeding access to services. The health service institutions, particularly the public facilities, are allegedly not poor-friendly for a few reasons. In part, the service providers are not properly educated about patients’ rights, as this vital component is missing from the medical training curricula; doctors are also apathetic about their duties due to low salaries and a lack of incentives. Another reason may be that the facilities are overcrowded (due to the lack of a referral system), which overburdens the providers.

The study also found that the poor were not fully aware of their entitlements in different targeted programmes (e.g. the free NGO health cards), as information, education and communication services were quite limited for the urban poor. In urban areas, there are no government domiciliary health workers, while this category

of provider plays an important role in making the rural poor aware of the existing services.

VII. CONCLUSIONS AND RECOMMENDATIONS

Rapid urbanization in Bangladesh, as elsewhere in Asia, is posing a tremendous challenge for meeting the growing demand for public and primary health services of the increased population. The present study demonstrates that the urban poor of Bangladesh are at a significant disadvantage in terms of access to basic public and primary health services. Although 60 per cent of the slum dwellers interviewed had access to water at a reasonable distance from their homes, access was quite limited in terms of the number of households per source of water. In a good number of cases (47 per cent), one source was shared by 76-110 households. Similarly, in the case of sanitation, although 60 per cent of households had access to hygienic sanitation, the situation in terms of sharing latrines was quite depressing, as one latrine was found to be shared by between 8 and 66 households. On the other hand, the poor always lived in an unhygienic environment. Only 25 per cent of slum dwellers were found to throw their garbage in a fixed place, while others threw it in various places, usually in front of their dwellings. It was also found that the majority of slum dwellers (60 per cent) had no idea of the consequences of eating unsafe food. Access to primary health services provided an even more disquieting picture, as 60 per cent of slum residents opted for a chemist shop as the first point of contact when they were ill. The study identified a wide array of deficiencies in the urban governance of public health services, ranging from policy weaknesses to institutional weaknesses that contribute significantly to depriving the poor of access to these services. They include: the absence of a comprehensive policy and even any specific legislation on urban public health, poor implementation of the existing rules and a lack of adequate resources (both financial and human) in local bodies, managerial inefficiencies in local bodies and inefficiencies in the institutions that provide services. Based on these findings, the study puts forward the following recommendations for improving the access of the urban poor to public and primary health services, which might have implications in the Asian region at large:

1. The country needs a comprehensive policy on urbanization. The growing number of poor people in urban areas and their inadequate access to health facilities, water, sanitation and solid waste facilities are increasing the risk of communicable diseases. The consequences of this problem are affecting millions every day but, unfortunately, this grim reality of urban health has not yet gained

currency in the policy arena as, conventionally, the rural poor are considered to be more vulnerable than the urban poor, and the majority of the poor live in rural areas. As more and more people are likely to move towards the cities in the future due to climate change and for other reasons, the country needs to formulate a comprehensive policy on urbanization, the urban poor and public health immediately.

2. An in-depth understanding of urban poverty trends and conditions is critical for the design of effective policies and programmes. Many targeted programmes failed to produce the desired result due to a lack of or improper identification of the poor. Therefore, at the outset, research should be conducted to determine the nature of urban poverty in the country.
3. As rural-urban migration plays a central role in urbanization, efforts should be undertaken to promote rural development and reduce rural poverty to minimize migration. At the same time, the decentralization of economic and administrative activities should be given serious consideration to reduce pressure on cities. For this purpose, industrial and economic zones could be set up outside of the cities and the devolution of authority to the local level should be ensured.
4. The national health policy should be holistic, encompassing public health issues such as water, sanitation, food safety and waste management, in addition to primary health care and maternal and child health. Primary health care alone is inadequate to make the impact necessary to improve urban health. In addition to primary health care, broader issues of public health should be given adequate attention in policies and the relevant legislation.
5. As cost is a major barrier to the access of the urban poor to primary health services, the Government could contemplate introducing cash transfers to poor women to encourage them to use institutional delivery services for childbirth, as has been done in India, or providing free health services for poor mothers, as has been done in Nepal.
6. Policy should emphasize making health service institutions poor-friendly by providing relevant training to providers.

7. The budgetary allocation for public health services should be increased from the present 4 per cent to 8 per cent, as has been done in neighbouring countries. Moreover, the Government orders that accompany the release of the funds to the city corporations/*pourashavas* need to specify that the funds are to be dedicated to public and primary health in urban areas. To make the expenditure allocation and disbursement transparent and efficient, computerization of the accounting system is also imperative.
8. Strengthening information, education and communication services to inform the poor of the existing facilities and make them aware of their entitlements is crucial for improving their access to services. Information, education and communication services should also be intensified to educate the poor about the consequences of being exposed to an unhygienic environment and eating stale food.
9. Local government is a key actor in the provision of public and primary health services in urban areas. The capacity of local government institutions to deal with public health issues needs to be improved by making them truly autonomous and financially independent. Across Asia, central Governments are delegating responsibilities for local problems to lower levels of government without devolving adequate authority to address them (ESCAP 2007, para. 56). Bangladesh is no exception. Without a real devolution of authority, local government will find it hard to be effective in managing public health services.
10. To coordinate, monitor and oversee the functions of various public and primary health service providers in urban areas and to manage public health funds, there should be a central coordinating authority or unit on urban health in the Ministry of Local Government and Rural Development.
11. A community-based development programme could be undertaken in order to improve the provision of services by integrating all of the stakeholders in the process. Community-driven programmes treat poor people and the groups to which they belong as their assets and partners in the development process. To address the limitations of the community organizations in providing services, a public-private partnership strategy could be adopted.

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THE IMPACT OF INTERNATIONAL AND INTERNAL REMITTANCES ON HOUSEHOLD WELFARE: EVIDENCE FROM VIET NAM

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Using data from the Viet Nam household living standard surveys of 2002 and 2004, this paper measures the impact of international and internal remittances on the household welfare of remittance-receiving households. It finds that both the income and the consumption expenditures of the recipients increased as a result of international and internal remittances. The impact of remittances on non-food expenditures tended to be greater than the impact on food expenditures. For international remittances, the impact on income was much greater than the impact on consumption expenditures, meaning that a large proportion of international remittances were used for savings and investment. The impact of internal remittances on income was slightly greater than the impact on consumption expenditures. In other words, most of the internal remittances were used for consumption expenditures.

I. INTRODUCTION

It is often argued that remittances are an important source of household income, which can help households increase investments and cope with socio-economic shocks. Yet, there has been little quantitative research on the impact of remittances on household welfare. One reason might be the positive correlation that some researchers believe exists between remittances and household welfare. However, the causal effect of remittances on household welfare deserves more investigation at least for two reasons. Firstly, the impact of remittances on income should be equal to the difference in income between the state of remittances and the counterfactual state of no remittances. The impact is not simply equal to the amount of the remittances received. For example, the impact of remittances on

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income would be small if remittances reduced the recipients' incentive to work. Secondly, even if remittances lead to a substantial increase in household income, there is no guarantee that they will result in similar increases in household welfare aspects, such as consumption, education and health care. If remittances have a strong impact on savings and investment, the impact on consumption and household welfare will be mitigated.

There are several studies investigating the relationship between international or internal remittances and poverty. For example, Adams and Page (2005) found a strong positive correlation between international remittances and poverty reduction in developing countries. At the country level, positive impacts of remittances, especially international remittances, on poverty reduction were also found in some studies such as Adams (1991), Adams (2004), Lopez-Cordova (2005), Taylor and others (2005), Esquivel and Huerta-Pineda (2007), Adams (2006), and Acosta and others (2007).

However, there are only a few studies on the impact of migration and remittances on household welfare, such as education, health care, consumption and savings. In addition, the impact of migration and remittances on household welfare is not always to be found positive in these empirical studies. For example, Hildebrandt and McKenzie (2005) found that children in migrant households had lower ratios of infant mortality and higher birth-weights, but also had a lower level of preventative health care than children in non-migrant households. McKenzie and Rapoport (2006) found that migration had a negative impact on the schooling ratio of children in Mexico. In contrast, Adams (2005) showed that both international and internal remittances helped increase the health-care and educational expenditures of receiving households. Regarding the impact on investment, Adams (1991) found that international remittances had a positive impact on household spending and investment in rural Egypt. In Adams (1998), positive effects of international remittances on investment and asset accumulation were also found in rural Pakistan.

In most studies assessing the impact of remittances, the problem of the endogeneity of remittances is sometimes not solved. Most studies agree that international migration is costly for the poor, and international remittances are luxuries for them. There is no guarantee that remittances are exogenous. Failure to correct the endogeneity of remittances will lead to a biased estimation of remittance impacts on household welfare.

In Viet Nam, remittances, especially international remittances, have been increasing over time. It is often argued that remittances have contributed to economic development and improved welfare. Although there are a large number

of studies on the impact of migration (e.g., Guest 1998; Djamba and others 1999; Dang and others 1997; Dang 2001; Dang and others 2003; Brauw and Harigaya, 2007), there are only a few on the impact of remittances in Viet Nam. Two exceptions are Nguyen (2008) and Nguyen and others (2008), which measure the impacts of international remittances on poverty and inequality. The objective of the paper is to measure the extent to which remittances international (foreign) and internal (domestic) can affect the welfare of receiving households in Viet Nam. By doing so, the paper is expected to contribute empirical findings to the debate on the relationship between remittances and improved household welfare in developing countries.

Compared with previous studies on remittances in Viet Nam, this study has two special features. Firstly, it focuses on direct welfare indicators, including income, consumption expenditures, expenditures on food and non-food, education and health care. It does not estimate the impact of remittances on poverty and inequality, which is addressed by Nguyen (2008) and Nguyen and others (2008). Secondly, it compares the effects of both international and internal remittances, while other studies focus on one or the other.

This paper is structured into six sections. The second section introduces the data set used in the paper. The third section describes household welfare and remittances in Viet Nam. The fourth section presents the method to measure impacts of remittances. Next, the fifth section presents the empirical findings on remittance impacts. Finally, the sixth section presents conclusions.

II. DATA SET

The paper relies on data from the two recent Viet Nam Household Living Standard Surveys (VHLSS), which were conducted by the General Statistics Office of Viet Nam (GSO) with technical support from the World Bank in the years 2002 and 2004.¹ The 2002 and 2004 VHLSS covered 29,530 and 9,188 households, respectively. The samples are representative for the national, rural and urban, and regional levels. The 2002 and 2004 VHLSS set up a panel of 4,008 households, which are representative for the whole country and for the urban and rural populations.

The surveys collected information through household and community-level questionnaires. Information on households includes basic demography, employment and labour force participation, education, health, income, expenditures, housing,

¹ Information on VHLSS is available on the website of GSO at www.gso.gov.vn.

fixed assets and durable goods, participation of households in poverty alleviation programmes, and especially information on international and internal remittances that households had received during the past 12 months before the interview.

It should be noted that the remittances defined in VHLSS include all moneys and kinds that households receive from anyone. Remittances can be given to households not only by their relatives but also their friends, neighbours, etc. Thus, international and internal remittances have a broad definition in this paper. They can be regarded as international or internal private transfers to households.

In VHLSS, income and expenditures data are collected using very detailed questionnaires. Household income includes income from agricultural and non-agricultural production, salary, wage, pension, scholarship, income from loan interest and house rental, remittances and subsidies. Income from agricultural production comprises crop income, livestock income, aquaculture income, and income from other agriculture-related activities.

Consumption expenditures include food and non-food expenditures. Food expenditures include purchased food and foodstuffs and self-produced products of households. Non-food expenditures comprise expenditures on education, health care, houses and commodities, and expenditures on power, water supply and garbage.

Information on the characteristics of communes was collected from 2,960 and 2,181 communes in the 2002 and 2004 surveys, respectively. Data on commune characteristics consist of demography and general situation of communes, general economic conditions and aid programmes, non-farm employment, agriculture production, local infrastructure and transportation, education, health, and social affairs. Commune data can be linked with household data.

III. REMITTANCES AND HOUSEHOLD WELFARE IN VIET NAM

Remittances can be an important source of household income, consumption and investments. In recent years, international remittances have become an increasing source of external funds for Viet Nam. During the period 2001-2006, international remittances increased from 26.1 billion to 75.2 billion Vietnamese dong.² The corresponding share of GDP increased from 5.5 to 7.5 per cent during the same period (Ratha and Xu 2007). Access to remittances at the household

² The exchange rate in January 2007 was about 16,000 dong per United States dollar.

level is not well known. Using VHLSS 2002 and 2004, the receipt of international and internal remittances by households over the period 2002-2004 can be examined. Table 1 shows that the proportion of households receiving international remittances was small, at 5.9 and 7.1 per cent in 2002 and 2004, respectively. During the period 2002-2004, the value of per capita international remittances increased by 34 per cent, from 4,005,000 to 5,367,000 dong.³ In 2004, the ratio of remittances to household income and consumption expenditures was 38.1 and 52.8 per cent, respectively. Table 1 also shows that urban households are more likely to receive international remittances than rural households.⁴ In 2004, the proportion of households receiving international remittances was 13.8 per cent and 7.1 per cent in urban and rural areas, respectively. Per capita international remittances were also higher for recipients in rural areas than in urban areas.

Table 1. International remittances received by households in 2002-2004

	2002*			2004		
	Urban	Rural	Total	Urban	Rural	Total
Percentage of receiving households	11.3 [0.8]	4.2 [0.2]	5.9 [0.3]	13.8 [0.9]	4.7 [0.3]	7.1 [0.3]
Per capita remittances received by households (thousands of dong)	4 477.9 [677.3]	3 599.2 [747.9]	4 005.4 [513.2]	5 352.5 [633.1]	3 861.9 [392.5]	4 626.6 [379.9]
Ratio of remittances to household expenditures (percentage)	46.6 [6.5]	88.8 [17.4]	60.5 [7.3]	44.9 [4.8]	71.2 [6.9]	52.8 [4.0]
Ratio of remittances to household income (percentage)	35.7 [3.7]	49.4 [5.4]	41.2 [3.3]	35.4 [3.0]	42.3 [2.8]	37.9 [2.1]

Source: Estimation from VHLSS 2002 and 2004.

Notes: * At 2004 prices.

Numbers within brackets indicate standard errors (standard errors are corrected for sampling weights and cluster correlation).

Compared to international remittances, internal remittances had much larger coverage (table 2). The proportion of households receiving internal remittances was 78.2 and 86.3 per cent in 2002 and 2004, respectively. Although, on average, internal remittances were smaller than international remittances, they experienced a very high growth rate during the period 2002-2004. Per capita internal remittances

³ Per capita remittances are equal to the total of remittances divided by the number of household members.

⁴ See Viet Nam (2001) for regulations on the classification of urban areas in Viet Nam. Urban areas include towns and wards. Each town/ward should have more than 4,000 people, and more than 65 per cent of labourers should have non-farm employment.

increased by about 57 per cent from 530,000 dong in 2002 to 831,000 dong in 2004. The ratio of the average internal remittances over household income and consumption expenditures was 11.6 and 15.1 per cent, respectively. The proportion of households receiving internal remittances is slightly higher in rural areas than urban areas. However, the average size of internal remittances in urban areas was much higher than that in rural areas.

Table 2. Internal remittances received by households in 2002-2004

	2002*			2004		
	Urban	Rural	Total	Urban	Rural	Total
Percentage of receiving households	74.9 [1.5]	79.3 [0.6]	78.2 [0.6]	84.9 [1.1]	86.9 [0.6]	86.3 [0.5]
Per capita remittances of receiving households (thousands of dong)	2 204.2 [131.7]	1 104.1 [34.9]	1 370.4 [43.4]	3 100.7 [231.1]	1 670.4 [55.6]	2 049.5 [75.1]
Ratio of remittances to household expenditures (percentage)	12.7 [0.9]	14.0 [0.4]	13.5 [0.5]	13.2 [0.8]	16.6 [0.8]	15.1 [0.6]
Ratio of remittances to household income (percentage)	10.6 [0.7]	10.7 [0.3]	10.6 [0.3]	10.9 [0.6]	12.0 [0.5]	11.5 [0.4]

Source: Estimation from VHLSS 2002 and 2004.

Notes: * At 2004 prices.

Numbers within brackets indicate standard errors (standard errors are corrected for sampling weights and cluster correlation).

Tables 3 and 4 compare some welfare indicators between remittance recipients and non-recipients. According to table 3, households without international remittances were more likely to have lower income and consumption than households with international remittances. In these tables, total consumption expenditures are disaggregated into food expenditures, health-care and education expenditures, and other non-food expenditures. For the purposes of this paper, non-food expenditures do not include health-care or education expenditures. Table 3 shows that households without international remittances have much lower consumption expenditures on food, health care, education, and other non-food items than households with remittances.

Contrary to the case of international remittances, households with internal remittances have slightly lower per capita income than households without internal remittances (table 4). Consumption expenditures are quite similar between households with and without internal remittances.

Table 3. Welfare of recipients and non-recipients of international remittances
(Thousands of Vietnamese dong)

Household indicators	2002*						2004					
	Urban			Rural			Urban			Rural		
	Recipient	Non-recipient	Total	Recipient	Non-recipient	Total	Recipient	Non-recipient	Total	Recipient	Non-recipient	Total
Per capita income	11 592.2 [817.7]	7 703.1 [272.6]	6 282.6 [458.3]	3 673.2 [40.3]	2 787.9 [40.3]	8 679.3 [500.6]	13 916.7 [888.9]	8 725.6 [663.8]	8 172.7 [416.9]	4 530.1 [63.3]	11 088.9 [435.3]	5 531.5 [153.2]
Per capita consumption expenditures	8 899.4 [362.3]	6 372.7 [194.5]	3 745.6 [118.1]	2 787.9 [24.6]	2 787.9 [24.6]	6 072.0 [262.2]	10 893.5 [554.3]	7 017.2 [616.1]	4 985.2 [233.3]	3 295.2 [28.8]	7 984.8 [339.5]	4 183.6 [117.7]
Per capita food consumption expenditures	3 103.3 [116.9]	2 458.4 [67.1]	1 645.9 [41.1]	1 445.6 [10.3]	1 445.6 [10.3]	2 303.7 [80.1]	3 604.9 [217.1]	2 576.6 [215.9]	1 930.8 [68.4]	1 564.0 [9.4]	2 780.8 [98.5]	1 805.7 [28.0]
Per capita health-care expenditures	455.5 [47.0]	263.0 [12.9]	276.6 [31.9]	162.2 [3.7]	162.2 [3.7]	357.4 [27.9]	737.1 [106.5]	410.9 [32.9]	569.1 [94.8]	237.5 [8.4]	654.4 [61.8]	278.9 [11.6]
Per capita educational expenditures	599.8 [42.9]	404.6 [15.4]	216.2 [17.4]	143.5 [3.1]	143.5 [3.1]	389.4 [24.9]	782.3 [121.9]	472.4 [38.6]	257.4 [18.9]	191.6 [5.2]	523.9 [60.6]	258.6 [10.6]
Per capita other non-food consumption expenditures	4 740.8 [262.2]	3 246.7 [121.4]	1 606.9 [68.3]	1 036.6 [13.5]	1 036.6 [13.5]	3 021.5 [173.3]	5 769.2 [266.0]	3 557.4 [338.9]	2 227.9 [131.7]	1 302.1 [18.6]	4 025.8 [198.6]	1 840.4 [73.6]

Source: Estimation from VHLSS 2002 and 2004.

Notes: * At 2004 prices. Numbers within brackets indicate standard errors (standard errors are corrected for sampling weights and cluster correlation).

Table 4. Welfare of recipients and non-recipients of internal remittances
(Thousands of Vietnamese dong)

Household indicators	2002*						2004					
	Urban			Rural			Urban			Rural		
	Recipient	Non-recipient	Total	Recipient	Non-recipient	Total	Recipient	Non-recipient	Total	Recipient	Non-recipient	Total
Per capita income	7 872.7 [296.2]	8 945.0 [524.1]	3 751.0 [45.8]	3 901.9 [108.2]	4 667.7 [90.5]	5 243.5 [195.1]	9 140.9 [654.0]	11 278.8 [1 451.5]	4 715.5 [71.7]	4 629.0 [144.1]	5 847.9 [154.3]	6 429.0 [341.4]
Per capita consumption expenditures	6 570.2 [192.1]	6 931.0 [352.2]	2 851.0 [27.6]	2 747.0 [46.2]	3 678.1 [65.1]	3 860.0 [133.8]	7 488.3 [622.4]	8 000.7 [958.9]	3 415.9 [37.0]	3 126.4 [73.6]	4 458.0 [127.8]	4 445.8 [185.5]
Per capita food consumption expenditures	2 494.4 [68.7]	2 642.0 [124.8]	1 459.8 [11.3]	1 433.5 [19.6]	1 689.9 [22.2]	1 755.0 [44.8]	2 684.4 [224.2]	2 935.5 [288.6]	1 591.0 [11.3]	1 522.6 [29.1]	1 870.8 [30.8]	1 905.0 [48.3]
Per capita health-care expenditures	297.8 [14.1]	249.2 [22.6]	174.0 [4.3]	141.9 [7.3]	201.5 [4.8]	170.4 [8.2]	458.7 [32.9]	446.7 [85.3]	259.3 [9.3]	216.4 [29.1]	310.3 [12.2]	278.8 [24.3]
Per capita educational expenditures	424.5 [15.0]	434.3 [31.7]	149.1 [3.6]	137.4 [5.7]	210.4 [5.2]	216.4 [11.1]	498.0 [35.2]	620.3 [138.3]	195.9 [5.7]	187.6 [9.8]	273.2 [11.7]	304.7 [27.1]
Per capita other non-food consumption expenditures	3 353.4 [120.9]	3 605.5 [212.9]	1 068.1 [15.1]	1 034.3 [25.3]	1 576.4 [39.4]	1 718.3 [81.2]	3 847.2 [341.5]	3 998.2 [502.2]	1 369.8 [23.5]	1 199.8 [37.8]	2 003.7 [81.3]	1 957.3 [112.8]

Source: Estimation from VHLSS 2002 and 2004.

Notes: * At 2004 prices. Numbers within brackets indicate standard errors (standard errors are corrected for sampling weights and cluster correlation).

The tables also compare welfare between urban and rural households. They show that urban households have higher welfare outcomes than rural areas.

IV. IMPACT EVALUATION METHOD

Parameter of interest

In this paper, the main objective of evaluating the impact of remittances is to assess the extent to which receiving remittances has changed the outcomes of the recipients.⁵ Remittances, international or internal, received by a household are denoted as D . D is a dummy variable, which is equal to one for the receiving household and zero otherwise. Let Y denote the observed value of the outcome, i.e., household income and expenditures in this paper. Further, let Y_1 and Y_0 denote potential outcomes in the state of remittances and no remittances, respectively. Then the impact of receiving remittances (international or internal) on a household i can be defined as:

$$\Delta_i = Y_{i1} - Y_{i0}. \quad (1)$$

The most popular parameter of the impact evaluation literature is Average Treatment Effect on the Treated (ATT) (Heckman and others, 1999), which is equal to:⁶

$$ATT = E(\Delta_i | D_i = 1) = E(Y_{i1} | D_i = 1) - E(Y_{i0} | D_i = 1), \quad (2)$$

where the term $E(Y_{i0} | D_i = 1)$ is not observed and has to be estimated. This is called a counterfactual outcome, which is the outcome of the recipients if they had not received remittances.

Estimation method

To estimate $E(Y_{i0} | D_i = 1)$, the observed outcome of household i at the time t is assumed to have the following semi-log functional form:

$$\ln(Y_{it}) = \beta_0 + G_t \beta_1 + X_{it} \beta_2 + D_{it} \beta_3 + u_i + \varepsilon_{it}, \quad t = 1, 2 \quad (3)$$

where G_t is a dummy variable for the year $t = 2$ (i.e., for the year 2004 in our data); X_{it} are control variables, i.e., households and communities characteristics of

⁵ In the literature of impact evaluation, a broader term—"treatment"—instead of programme/project is sometimes used to refer to an intervention whose impact is evaluated.

⁶ In some formulas, the subscript i is dropped for simplicity.

household; D_{it} are the dummy variables indicating receipt of international and internal remittances; u_i and ε_{it} are unobserved time-invariant and time-variant variables, respectively. In equation (3), the variable G_t is included to allow the intercept shift between the time t_1 and t_2 . It reflects the common macroeconomic effects on the households.

Empirical studies tend to use semi-log functions of income and expenditures, since income and expenditures often follow log-normal distribution (e.g., Glewwe, 1991). Once coefficients in equation (3) are estimated, we can estimate \hat{Y}_{it0} for a receiving household i at the time t as follows:

$$\begin{aligned}\hat{Y}_{it0} &= e^{[\ln(Y_{it0})]} \\ &= e^{(\hat{\beta}_0 + G_t \hat{\beta}_1 + X_{it} \hat{\beta}_2 + \hat{u}_i + \hat{\varepsilon}_{it})} \\ &= e^{[\ln(Y_{it}) - \hat{\beta}_3]} \\ &= Y_{it} e^{(-\hat{\beta}_3)}.\end{aligned}\quad (4)$$

As a result, ATT at the time t can be estimated as follows:

$$\begin{aligned}ATT_t &= \hat{E}(Y_{it1} \mid D_{it} = 1) - \hat{E}(\hat{Y}_{it0} \mid D_{it} = 1) \\ &= \frac{1}{n_t} \sum_{i=1}^{n_t} Y_{it} - \frac{1}{n_t} \sum_{i=1}^{n_t} Y_{it} e^{(-\hat{\beta}_3)} \\ &= \frac{1}{n_t} [1 - e^{(-\hat{\beta}_3)}] \sum_{i=1}^{n_t} Y_{it},\end{aligned}\quad (5)$$

where n_t is the number of the remittance recipients at the time t . ATT depends on outcomes at the time t , it can be different between different points of time. As a result, we can estimate ATT for both 2002 and 2004. The standard error of the estimates can be calculated using bootstrap techniques.⁷

It should be noted that if equation (3) is linear instead of semi-log, ATT will be equal to the coefficient of D , i.e. β_3 , which is constant over time.

The main problem in estimating equation (3) is the endogeneity of the receipt of remittances. Recipients may have unobserved characteristics that can be different from those of non-recipients. For example, households with international remittances can have more favourable conditions or more information on

⁷ Bootstrapping is a widely-used method to construct the repeated random samples of an estimator by resampling the available data. Suppose that we have a data sample and aim to calculate the standard error of an estimator. Then, we draw random samples with replacement from the original data sample, and for each replication we can compute a value of the estimator. After a number of bootstrap replications, we will have a sample of estimates, which can be used to calculate the standard error of the estimator.

international migration than households without remittances. In addition, members in households with international remittances could be more motivated for higher income and have been seeking overseas migration to rich areas. Failure to control for such unobserved factors leads to biased estimates of the impact of remittances. In this paper, we rely on fixed-effect regressions using panel data to avoid endogeneity bias. A main identification assumption of fixed-effect regression is that only unobserved time-invariant variables, u_i , in the outcome equation are correlated with the receipt of remittances. It is expected that the relevant variables, such as migration conditions or motivation for higher income, are time-invariant during such a short period of time. By taking the difference in household variables over time, fixed-effect regressions can remove the unobserved time-invariant variables to obtain unbiased estimates of coefficients in the outcome equation.

However, the main drawback of the impact evaluation approach taken in this paper is that it does not allow for indirect or spillover effects. Households can use remittances for investment and lending, which can have indirect effects on the economy and other households. Estimating the indirect effects is beyond the scope of the paper, since the paper relies on microdata in analysing remittances.

V. EMPIRICAL RESULTS

This section presents empirical findings on the impact of the receipt of international and internal remittances. Remittances are expected to increase per capita income and consumption expenditures. Thus, the outcomes selected in the paper include per capita income, per capita consumption expenditure, and per capita expenditure on foods, health care, education and other non-food items. Data on the outcomes in 2002 are adjusted to the price in 2004 to eliminate the inflation effect and to allow for comparison of impacts over the period 2002-2004.

The explanatory variables in regressions consist of characteristics of households and villages, and geographic variables. The household variables include household demography, household assets and education. The village variables are the dummy variable of village road and the distance from villages to nearest markets. Geographic variables are dummy regional and urbanity variables. It should be noted that these explanatory variables should be exogenous and not be affected by the receipt of international or internal remittances.

The explanatory variables and regression results are presented in tables A.1 to A.3 in the appendix. Most of the explanatory variables have the expected signs. For example, in regressions of per capita income and expenditures (table A.1), households with remittances are more likely to have higher per capita

income and expenditures. Households having large ratios of children and old people have lower per capita income and expenditures. Education and land variables have positive effects on income and expenditures, as expected. The time-effect dummy variable is positive and statistically significant. It means that, given the control variables, per capita income and expenditures were increasing overtime.

We run both random and fixed-effect regressions, and use Hausman specification tests to test difference in coefficients between the random and fixed-effect regression. The test statistics strongly reject the null hypothesis that the difference in coefficients between two regressions is not systematic (the test results are presented in tables A.4 to A.9 in the appendix, and all the P-values of the tests are smaller than 0.01). Thus, we are inclined to use the fixed-effect regressions (with sampling weights and cluster correlation) to estimate ATT of remittances.

We also test whether there is a difference in the impact of remittance receipts on household welfare between urban and rural households. We include interactions between the receipt of remittances (international and internal) and the urban dummy variables. The regression results are presented in table A.10 in the appendix. It shows that most of the interaction terms are not statistically significant in outcome equations. It indicates that the difference in the impact of remittances between urban and rural households is not statistically significant. Thus, we will present the impact estimates of remittances on the welfare outcomes of all the receiving households (i.e., results from regressions without interaction between remittance receipts and urbanity).

Estimates of the ATT parameter for international remittances are presented in table 5. It shows that the receipt of international remittances increased the per capita income of the recipients by 1,425,000 and 1,820,000 dong in 2002 and 2004, respectively. The increases in income are lower than the remittances received by households. This means that simply deducting remittances from income does not reflect the counterfactual income in the absence of the remittances.

International remittances also had positive and statistically significant impact on per capita consumption expenditures. They increased per capita expenditures by 716,000 and 478,000 dong in 2002 and 2004, respectively. In other words, it helped the recipients increase per capita expenditures by about 9 and 7 per cent in 2002 and 2004, respectively. The receipt of international remittances also increased the non-food expenditures of the recipients. However, the effect estimates of international remittances on per capita expenditures on food, health care and education were not statistically significant. The reason international remittances had a small impact on expenditures might be that households with remittances

already had high enough consumption expenditures. Thus, additional remittances did not lead to large increases in consumption expenditures.

It should be noted that the impact of international remittances on income was much higher than that on expenditures. We also tested the equality of the impact on per capita income and the impact on per capita expenditures, and the test statistics strongly rejected the hypothesis on the equality of the impacts. This finding suggests that international remittances helped the receiving households increase savings or production investment.

Table 5. Estimates of the impact of international remittances
(Thousands of Vietnamese dong)

Household indicators	2002			2004		
	Y_1	Y_0	Impact: ($Y_1 - Y_0$)	Y_1	Y_0	Impact: ($Y_1 - Y_0$)
Per capita income	8 679.3*** [500.6]	7 254.7*** [668.2]	1 424.6*** [286.4]	11 088.9*** [435.3]	9 268.8*** [514.7]	1 820.1*** [352.1]
Per capita consumption expenditures	6 072.0*** [262.2]	5 556.0*** [283.3]	516.0*** [132.5]	7 984.8*** [339.5]	7 507.2*** [359.1]	477.6*** [183.6]
Per capita food consumption expenditures	2 303.7*** [80.1]	2 164.0*** [89.4]	139.7** [53.5]	2 780.8*** [98.5]	2 712.2*** [112.5]	68.6 [69.2]
Per capita health-care expenditures	357.4*** [27.9]	350.3*** [58.1]	7.1 [32.6]	654.4*** [61.8]	588.1*** [114.2]	66.3 [67.9]
Per capita education expenditures	389.4*** [24.9]	336.7*** [59.8]	52.7 [51.5]	523.9*** [60.6]	485.8*** [67.4]	38.1 [51.3]
Per capita non-food consumption expenditures	3 021.5*** [173.3]	2 746.2*** [164.7]	275.3*** [87.9]	4 025.8*** [198.6]	3 759.4*** [243.7]	266.4*** [114.1]

Source: Estimation from VHLSS 2002 and 2004.

Notes: * significant at 10%, ** significant at 5%, *** significant at 1%.

Standard errors in brackets.

Standard errors are corrected for sampling weights and estimated using bootstrap (non-parametric) with 200 replications.

Estimates of the impact of the receipt of internal remittances on the recipients are presented in table 6. The impact on per capita income of internal remittances was much lower than that of international remittances, since the value of internal remittances was lower than that of international remittances. The receipt of internal remittances increased the per capita income of the recipients by nearly 6 per cent, or equivalent to 243,000 and 305,000 dong in 2002 and 2004, respectively.

Table 6. Estimates of the impact of internal remittances
(Thousands of Vietnamese dong)

Household indicators	2002			2004		
	Y_1	Y_0	Impact: ($Y_1 - Y_0$)	Y_1	Y_0	Impact: ($Y_1 - Y_0$)
Per capita income	4 667.7*** [90.5]	4 424.0*** [153.1]	243.7*** [91.0]	5 847.9*** [154.3]	5 542.7*** [136.5]	305.2*** [115.7]
Per capita consumption expenditures	3 678.1*** [65.1]	3 465.1*** [76.7]	213.0*** [55.3]	4 458.0*** [127.8]	4 199.8*** [75.7]	258.2*** [67.4]
Per capita food consumption expenditures	1 689.9*** [22.2]	1 652.0*** [41.3]	37.9 [27.6]	1 870.8*** [30.8]	1 829.0*** [32.6]	41.8* [28.1]
Per capita health-care expenditures	201.5*** [4.8]	173.2*** [11.9]	28.3** [14.0]	310.3*** [12.2]	266.8*** [19.3]	43.5*** [16.7]
Per capita education expenditures	210.4*** [5.2]	183.3*** [18.1]	27.1* [14.1]	273.2*** [11.7]	238.0*** [19.8]	35.2** [17.3]
Per capita non-food consumption expenditures	1 576.4*** [39.4]	1 430.4*** [49.2]	146.0*** [35.8]	2 003.7*** [81.3]	1 818.2*** [51.5]	185.5*** [41.1]

Source: Estimation from VHLSS 2002 and 2004.

Notes: * significant at 10%, ** significant at 5%, *** significant at 1%.

Standard errors in brackets.

Standard errors are corrected for sampling weights and estimated using bootstrap (non-parametric) with 200 replications.

The effect of internal remittances on the expenditures of the recipients is slightly smaller than the effect on income. This means that most internal remittances were used for consumption rather than investment or savings. The effect of the receipt of internal remittance on the recipients' expenditure was estimated at 213,000 and 258,000 dong in 2002 and 2004, respectively. It is interesting that impact estimates on food consumption expenditure, and other expenditures on health care, education and other non-foods are positive and statistically significant in 2004 (at least at the 10 per cent level – table 6). Compared to international remittances, internal remittances are spent more on consumption items.

VI. CONCLUSION

Remittances, especially international remittances, have been increasing over time in Viet Nam. Remittances are often mentioned as important resources for increasing income and smoothing consumption. Yet, little is known on the quantitative impact of remittances on household welfare in Viet Nam. Using panel

data from VHLSS 2002 and 2004, the paper investigates the access of households to international and internal remittances and measures the extent to which the receipt of remittances can affect the income and the consumption expenditures of the recipients.

It should be noted that international and internal remittances have broad definitions in this paper. More specifically, international and internal remittances are defined as all overseas and domestic private transfers to households, respectively. They can be sent to households not only by migrants from those households but also by friends and relatives.

International remittances are still considered luxuries for the people. About 5.9 and 7.1 per cent of households received international remittances in 2002 and 2004, respectively. By comparison, internal remittances had much larger coverage. The proportion of households receiving internal remittances was 78.2 and 86.3 per cent in 2002 and 2004, respectively. However, the average value of internal remittances was much smaller than that of international remittances.

With regard to impact, the receipt of international remittances increased the per capita expenditures of the recipients. International remittances also had positive and statistically significant impacts on expenditures on non-food consumption (excluding health-care and educational spending). However, the effects of the receipt of international remittances on per capita expenditures on food, education and health care were not statistically significant. The impact of international remittances on income was much higher than the impact on expenditures, which indicates that international remittances helped the recipients increase savings and production investment.

The receipt of internal remittances also increased the income and expenditure of households. The impact on income was slightly higher than that on expenditure. In other words, households are more likely to use internal remittances for consumption expenditure. Internal remittances also increased per capita food consumption expenditure and per capita expenditures on health care, education and other non-food consumption.

In short, international remittances covered a small proportion of the population, and the recipient household was often high-income. As a result, international remittances had an important role in increasing the income, savings and assets of the receiving households. By comparison, internal remittances covered a large proportion of the population. Households receiving internal remittances had smaller income than other households. Internal remittances helped the recipients increase consumption expenditure rather than savings or assets.

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APPENDIX

Table A.1. Regressions of logarithm of per capita income and expenditures

Explanatory variables	Logarithm of per capita income			Logarithm of per capita expenditures		
	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation
Receipt of international remittances (dummy variable)	0.3205*** [0.0260]	0.1955*** [0.0328]	0.1916*** [0.0374]	0.1942*** [0.0197]	0.1008*** [0.0234]	0.0897*** [0.0282]
Receipt of internal remittances (dummy variable)	0.0465*** [0.0154]	0.0631*** [0.0189]	0.0557*** [0.0213]	0.0707*** [0.0116]	0.0681*** [0.0135]	0.0656*** [0.0153]
Ratio of members younger than 16	-0.5319*** [0.0352]	-0.3534*** [0.0627]	-0.3615*** [0.0801]	-0.5014*** [0.0280]	-0.2988*** [0.0447]	-0.2920*** [0.0544]
Ratio of members who older than 60	-0.3521*** [0.0318]	-0.2849*** [0.0598]	-0.2920*** [0.0697]	-0.2626*** [0.0255]	-0.2460*** [0.0427]	-0.2304*** [0.0545]
Household size	-0.0638*** [0.0131]	-0.1022*** [0.0225]	-0.1074*** [0.0259]	-0.0825*** [0.0104]	-0.1341*** [0.0160]	-0.1368*** [0.0189]
Household size squared	-0.0001 [0.0012]	0.0033* [0.0019]	0.0036* [0.0020]	0.0016* [0.0009]	0.0061*** [0.0014]	0.0063*** [0.0017]
Ratio of household member with technical degree	0.7169*** [0.0467]	0.3021*** [0.0625]	0.2991*** [0.0641]	0.5819*** [0.0358]	0.2610*** [0.0446]	0.2687*** [0.0557]
Ratio of household member with post secondary	1.1421*** [0.0644]	0.4167*** [0.1110]	0.3662*** [0.1061]	1.0080*** [0.0511]	0.3286*** [0.0792]	0.3058*** [0.1139]

Table A.1. (continued)

Explanatory variables	Logarithm of per capita income			Logarithm of per capita expenditures		
	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation
Area of annual crop land per capita (m ²)	0.4375*** [0.0495]	0.5112*** [0.0816]	0.4945*** [0.1550]	0.2309*** [0.0391]	0.3617*** [0.0582]	0.3295*** [0.0720]
Area of perennial crop land per capita (m ²)	0.3974*** [0.0494]	0.1970*** [0.0684]	0.2132 [0.1456]	0.2128*** [0.0381]	0.1113** [0.0488]	0.1165* [0.0653]
Forestry land per capita (m ²)	0.1281*** [0.0356]	0.1321*** [0.0456]	0.1811** [0.0719]	0.0642** [0.0271]	0.0692** [0.0325]	0.1035** [0.0491]
Area of aquaculture water surface per capita (m ²)	0.7394*** [0.1142]	0.6758*** [0.1844]	0.7010** [0.2820]	0.4509*** [0.0901]	0.3806*** [0.1316]	0.3417** [0.1646]
Have road to village	0.013 [0.0171]	-0.0123 [0.0220]	-0.0225 [0.0245]	-0.0008 [0.0131]	-0.0189 [0.0157]	-0.0207 [0.0184]
Distance to nearest daily market (km)	-0.0055*** [0.0012]	0.0014 [0.0016]	0.0019 [0.0014]	-0.0045*** [0.0009]	0.0005 [0.0011]	0.0003 [0.0011]
Red River Delta	Base					
North East	-0.0858*** [0.0261]			-0.1050*** [0.0219]		
North West	-0.2648*** [0.0408]			-0.3385*** [0.0342]		
North Central Coast	-0.2140*** [0.0277]			-0.1266*** [0.0233]		

Table A.1. (continued)

Explanatory variables	Logarithm of per capita income			Logarithm of per capita expenditures		
	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation
South Central Coast	-0.0394 [0.0286]			-0.0071 [0.0241]		
Central Highlands	-0.0883** [0.0347]			-0.1902*** [0.0291]		
North East South	0.2895*** [0.0276]			0.2370*** [0.0232]		
Mekong River Delta	0.1154*** [0.0237]			0.0514*** [0.0198]		
Urban	0.3737*** [0.0236]			0.4775*** [0.0191]		
Time effect (dummy 2004)	0.1509*** [0.0090]	0.1657*** [0.0092]	0.1637*** [0.0103]	0.1168*** [0.0065]	0.1315*** [0.0066]	0.1321*** [0.0079]
Constant	8.4356*** [0.0447]	8.5858*** [0.0678]	8.6436*** [0.0819]	8.2889*** [0.0355]	8.4796*** [0.0484]	8.5174*** [0.0564]
Observations	8 016	8 016	8 016	8 016	8 016	8 016
Number of households	4 008	4 008	4 008	4 008	4 008	4 008
R-squared	0.38	0.20	0.20	0.48	0.22	0.22

Source: Estimation from panel data VHLSSs 2002-2004.

Notes: Standard errors in brackets.

* significant at 10%, ** significant at 5%, *** significant at 1%.

Table A.2. Regressions of logarithm of per capita food and health-care expenditures

Explanatory variables	Logarithm of per capita food expenditures			Logarithm of per capita health-care expenditures		
	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation
Receipt of international remittances (dummy variable)	0.1094*** [0.0170]	0.0468** [0.0215]	0.0371 [0.0248]	0.3405*** [0.0688]	0.1094 [0.0986]	0.1023 [0.1008]
Receipt of internal remittances (dummy variable)	0.0183* [0.0101]	0.0209* [0.0124]	0.0203 [0.0152]	0.2405*** [0.0413]	0.1405** [0.0567]	0.1278* [0.0657]
Ratio of members younger than 16	-0.3334*** [0.0230]	-0.2096*** [0.0412]	-0.2137*** [0.0459]	-0.3599*** [0.0867]	0.0661 [0.1886]	0.14 [0.2025]
Ratio of members who older than 60	-0.1880*** [0.0208]	-0.1530*** [0.0393]	-0.1340*** [0.0445]	0.6964*** [0.0777]	0.4538** [0.1800]	0.5366*** [0.2034]
Household size	-0.0982*** [0.0086]	-0.1292*** [0.0148]	-0.1283*** [0.0162]	-0.0832** [0.0325]	-0.0791 [0.0676]	-0.0825 [0.0750]
Household size squared	0.0035*** [0.0008]	0.0057*** [0.0013]	0.0058*** [0.0014]	0.001 [0.0029]	0.0043 [0.0058]	0.0046 [0.0062]
Ratio of household members with technical degree	0.3593*** [0.0305]	0.2036*** [0.0411]	0.2140*** [0.0458]	0.5600*** [0.1220]	0.2068 [0.1881]	0.192 [0.2271]
Ratio of household members with post secondary	0.6062*** [0.0421]	0.3621*** [0.0730]	0.3759*** [0.0856]	0.7595*** [0.1594]	0.093 [0.3339]	0.0923 [0.3910]
Area of annual crop land per capita (m ²)	0.1816*** [0.0323]	0.2934*** [0.0536]	0.2891*** [0.0608]	-0.0696 [0.1234]	0.6678*** [0.2455]	0.5545* [0.3109]

Table A.2. (continued)

Explanatory variables	Logarithm of per capita food expenditures			Logarithm of per capita health-care expenditures		
	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation
Area of perennial crop land per capita (m ²)	0.1708*** [0.0322]	0.0870* [0.0449]	0.1026 [0.0747]	0.2336* [0.1277]	0.1766 [0.2056]	0.1498 [0.1716]
Forestry land per capita (m ²)	0.0723*** [0.0233]	0.0594** [0.0300]	0.0901** [0.0411]	-0.1467 [0.0943]	0.092 [0.1372]	0.1085 [0.1697]
Area of aquaculture water surface per capita (m ²)	0.1739** [0.0747]	0.1807 [0.1212]	0.1538 [0.1555]	0.3595 [0.2853]	1.7710*** [0.5548]	1.5764** [0.7589]
Have road to village	-0.0062 [0.0112]	-0.0181 [0.0145]	-0.0111 [0.0201]	0.0437 [0.0452]	-0.0309 [0.0662]	-0.0323 [0.0778]
Distance to nearest daily market (km)	-0.0013* [0.0008]	0.0016 [0.0011]	0.0012 [0.0012]	-0.0124*** [0.0031]	-0.002 [0.0048]	-0.0005 [0.0055]
Red River Delta	Base					
	-					
North East	-0.017 [0.0171]			-0.4659*** [0.0606]		
North West	-0.2324*** [0.0267]			-0.2659*** [0.0948]		
North Central Coast	-0.1733*** [0.0181]			-0.1590** [0.0639]		

Table A.2. (continued)

Explanatory variables	Logarithm of per capita food expenditures			Logarithm of per capita health-care expenditures		
	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation
South Central Coast	-0.0924*** [0.0188]			0.1717*** [0.0660]		
Central Highlands	-0.2016*** [0.0227]			0.1497* [0.0805]		
North East South	0.1067*** [0.0180]			0.3319*** [0.0636]		
Mekong River Delta	0.0265* [0.0155]			0.3941*** [0.0549]		
Urban	0.2718*** [0.0154]			0.2805*** [0.0577]		
Time effect (dummy 2004)	0.0402*** [0.0059]	0.0457*** [0.0060]	0.0464*** [0.0081]	0.2943*** [0.0267]	0.3300*** [0.0277]	0.3503*** [0.0325]
Constant	7.7218*** [0.0292]	7.8082*** [0.0445]	7.8142*** [0.0502]	4.3093*** [0.1112]	4.3226*** [0.2038]	4.3548*** [0.2370]
Observations	8 016	8 016	8 016	8 016	8 016	8 016
Number of i	4 008	4 008	4 008	4 008	4 008	4 008
R-squared	0.36	0.20	0.20	0.15	0.05	0.05

Source: Estimation from panel data VHLSS 2002-2004.

Notes: Standard errors in brackets.

* significant at 10%, ** significant at 5%, *** significant at 1%.

Table A.3. Regressions of logarithm of per capita education expenditures and other non-food expenditures

Explanatory variables	Logarithm of per capita education expenditures			Logarithm of other non-food expenditures per capita		
	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation
Receipt of international remittances (dummy variable)	0.2511*** [0.0947]	0.0683 [0.1156]	0.0666 [0.1381]	0.2651*** [0.0316]	0.1332*** [0.0381]	0.1184*** [0.0414]
Receipt of internal remittances (dummy variable)	0.2320*** [0.0560]	0.1331** [0.0665]	0.1769** [0.0750]	0.1119*** [0.0187]	0.1189*** [0.0219]	0.1112*** [0.0228]
Ratio of members younger than 16	1.6769*** [0.1323]	1.2417*** [0.2210]	1.2686*** [0.2685]	-0.6653*** [0.0442]	-0.3462*** [0.0728]	-0.3266*** [0.0873]
Ratio of members who older than 60	-2.5045*** [0.1199]	-1.7791*** [0.2109]	-1.7965*** [0.2869]	-0.4134*** [0.0401]	-0.3541*** [0.0695]	-0.3600*** [0.1113]
Household size	0.9963*** [0.0492]	1.0030*** [0.0792]	1.0419*** [0.1205]	-0.0814*** [0.0165]	-0.1848*** [0.0261]	-0.1904*** [0.0310]
Household size squared	-0.0697*** [0.0043]	-0.0669*** [0.0068]	-0.0697*** [0.0104]	0.0004 [0.0014]	0.0095*** [0.0022]	0.0097*** [0.0026]
Ratio of household members with technical degree	0.2997* [0.1712]	-0.7428*** [0.2204]	-0.6542** [0.2682]	0.8651*** [0.0571]	0.3178*** [0.0726]	0.3166*** [0.1003]
Ratio of household members with post-secondary	1.0565*** [0.2416]	-1.1572*** [0.3913]	-0.9601 [0.6684]	1.5015*** [0.0807]	0.5002*** [0.1289]	0.4559*** [0.1653]

Table A.3. (continued)

Explanatory variables	Logarithm of per capita education expenditures			Logarithm of other non-food expenditures per capita		
	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation
Area of annual crop land per capita (m ²)	-0.1508 [0.1851]	0.2737 [0.2877]	0.3104 [0.3353]	0.3632*** [0.0618]	0.4927*** [0.0948]	0.4345*** [0.1064]
Area of perennial crop land per capita (m ²)	0.1585 [0.1817]	-0.2528 [0.2410]	-0.2955 [0.2207]	0.2847*** [0.0606]	0.0818 [0.0794]	0.0898 [0.0967]
Forestry land per capita (m ²)	0.1518 [0.1300]	0.0695 [0.1608]	0.0142 [0.1328]	0.0538 [0.0434]	0.0719 [0.0530]	0.1406 [0.1066]
Area of aquaculture water surface per capita (m ²)	0.2399 [0.4267]	-0.3779 [0.6503]	-0.5293 [0.7639]	0.7971*** [0.1425]	0.5879*** [0.2142]	0.5962*** [0.2694]
Have road to village	0.0737 [0.0626]	-0.034 [0.0776]	-0.0362 [0.0705]	0.023 [0.0209]	-0.0013 [0.0256]	-0.0076 [0.0282]
Distance to nearest daily market (km)	-0.0211*** [0.0043]	0.003 [0.0056]	0.0037 [0.0048]	-0.0102*** [0.0014]	-0.0011 [0.0019]	-0.0012 [0.0020]
Red River Delta	Base					
North East	-0.4414*** [0.1015]			-0.1912*** [0.0340]		
North West	-0.9670*** [0.1582]			-0.5341*** [0.0530]		
North Central Coast	-0.0146 [0.1077]			-0.1038*** [0.0361]		

Table A.3. (continued)

Explanatory variables	Logarithm of per capita education expenditures			Logarithm of other non-food expenditures per capita		
	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation	Random effect (no sampling weight)	Fixed-effect (no sampling weight)	Fixed-effect with sampling weight and cluster correlation
South Central Coast	-0.2661** [0.1114]			0.1156*** [0.0373]		
Central Highlands	-0.5384*** [0.1347]	-0.2576*** [0.0451]				
North East South	-0.3227*** [0.1071]	0.3976*** [0.0359]				
Mekong River Delta	-0.8614*** [0.0917]	0.1400*** [0.0307]				
Urban	0.8345*** [0.0896]	0.7240*** [0.0300]				
Time effect (dummy 2004)	0.2911*** [0.0318]	0.3093*** [0.0324]	0.2913*** [0.0357]	0.1860*** [0.0106]	0.2079*** [0.0107]	0.2048*** [0.0116]
Constant	0.4339*** [0.1675]	0.3495 [0.2389]	0.2563 [0.3564]	7.1211*** [0.0560]	7.4926*** [0.0787]	7.5664*** [0.0891]
Observations	8 016	8 016	8 016	8 016	8 016	8 016
Number of i	4 008	4 008	4 008	4 008	4 008	4 008
R-squared	0.32	0.22	0.22	0.45	0.18	0.18

Source: Estimation from panel data VHLSS 2002-2004.

Notes: Standard errors in brackets.

* significant at 10%, ** significant at 5%, *** significant at 1%.

Table A.4. Hausman tests of fixed-effect and random effect regressions of logarithm of per capita income (with control variables)

Explanatory variables	Fixed-effect regression	Random-effect regression	Difference	Std. err. of difference
Receipt of international remittances (dummy variable)	0.1955	0.3205	-0.1250	0.0208
Receipt of internal remittances (dummy variable)	0.0631	0.0465	0.0166	0.0113
Ratio of members younger than 16	-0.3534	-0.5319	0.1785	0.0530
Ratio of members older than 60	-0.2849	-0.3521	0.0671	0.0517
Household size	-0.1022	-0.0638	-0.0384	0.0186
Household size squared	0.0033	-0.0001	0.0034	0.0016
Ratio of household members with technical degree	0.3021	0.7169	-0.4149	0.0429
Ratio of household members with post-secondary education	0.4167	1.1421	-0.7254	0.0924
Area of annual crop land per capita (m ²)	0.5112	0.4375	0.0737	0.0664
Area of perennial crop land per capita (m ²)	0.1970	0.3974	-0.2004	0.0487
Forestry land per capita (m ²)	0.1321	0.1281	0.0040	0.0295
Area of aquaculture water surface per capita (m ²)	0.6758	0.7394	-0.0636	0.1482
Have road to village	-0.0123	0.0130	-0.0254	0.0143
Distance to nearest daily market (km)	0.0014	-0.0055	0.0069	0.0011
Time effect (dummy 2004)	0.1657	0.1509	0.0148	0.0024
Constant	8.5858	8.4356	0.1501	0.0523
Test: Ho: difference in coefficients not systematic				
Chi - square statistic	220.5			
P-value	0.000			

Source: Estimation from panel data of VHLSS 2002-2004.

Table A.5. Hausman tests of fixed-effect and random effect regressions of logarithm of per capita expenditures (with control variables)

Explanatory variables	Fixed-effect regression	Random-effect regression	Difference	Std. err. of difference
Receipt of international remittances (dummy variable)	0.1008	0.1942	-0.0934	0.0135
Receipt of internal remittances (dummy variable)	0.0681	0.0707	-0.0026	0.0073
Ratio of members younger than 16	-0.2988	-0.5014	0.2026	0.0361
Ratio of members older than 60	-0.2460	-0.2626	0.0166	0.0354
Household size	-0.1341	-0.0825	-0.0516	0.0126
Household size squared	0.0061	0.0016	0.0044	0.0011
Ratio of household members with technical degree	0.2610	0.5819	-0.3208	0.0282
Ratio of household members with post-secondary education	0.3286	1.0080	-0.6794	0.0627
Area of annual crop land per capita (m ²)	0.3617	0.2309	0.1308	0.0448
Area of perennial crop land per capita (m ²)	0.1113	0.2128	-0.1015	0.0322
Forestry land per capita (m ²)	0.0692	0.0642	0.0049	0.0192
Area of aquaculture water surface per capita (m ²)	0.3806	0.4509	-0.0703	0.0998
Have road to village	-0.0189	-0.0008	-0.0181	0.0093
Distance to nearest daily market (km)	0.0005	-0.0045	0.0050	0.0007
Time effect (dummy 2004)	0.1315	0.1168	0.0147	0.0016
Constant	8.4796	8.2889	0.1908	0.0344
Test: Ho: difference in coefficients not systematic				
Chi - square statistic	311.3			
P-value	0.000			

Source: Estimation from panel data of VHLSS 2002-2004.

Table A.6. Hausman tests of fixed-effect and random effect regressions of logarithm of per capita food expenditures (with control variables)

<i>Explanatory variables</i>	<i>Fixed-effect regression</i>	<i>Random-effect regression</i>	<i>Difference</i>	<i>Std. err. of difference</i>
Receipt of international remittances (dummy variable)	0.0468	0.1094	-0.0626	0.0135
Receipt of internal remittances (dummy variable)	0.0209	0.0183	0.0025	0.0074
Ratio of members younger than 16	-0.2096	-0.3334	0.1238	0.0345
Ratio of members older than 60	-0.1530	-0.1880	0.0350	0.0337
Household size	-0.1292	-0.0982	-0.0309	0.0121
Household size squared	0.0057	0.0035	0.0021	0.0010
Ratio of household members with technical degree	0.2036	0.3593	-0.1557	0.0279
Ratio of household members with post-secondary education	0.3621	0.6062	-0.2441	0.0601
Area of annual crop land per capita (m ²)	0.2934	0.1816	0.1119	0.0432
Area of perennial crop land per capita (m ²)	0.0870	0.1708	-0.0838	0.0317
Forestry land per capita (m ²)	0.0594	0.0723	-0.0129	0.0192
Area of aquaculture water surface per capita (m ²)	0.1807	0.1739	0.0068	0.0964
Have road to village	-0.0181	-0.0062	-0.0119	0.0093
Distance to nearest daily market (km)	0.0016	-0.0013	0.0029	0.0007
Time effect (dummy 2004)	0.0457	0.0402	0.0055	0.0016
Constant	7.8082	7.7218	0.0863	0.0340
Test: Ho: difference in coefficients not systematic				
Chi – square statistic	104.35			
P-value	0.000			

Source: Estimation from panel data of VHLSS 2002-2004.

Table A.7. Hausman tests of fixed-effect and random effect regressions of logarithm of per capita healthcare expenditures (with control variables)

Explanatory variables	Fixed-effect regression	Random-effect regression	Difference	Std. err. of difference
Receipt of international remittances (dummy variable)	0.1094	0.3405	-0.2311	0.0712
Receipt of internal remittances (dummy variable)	0.1405	0.2405	-0.1000	0.0392
Ratio of members younger than 16	0.0661	-0.3599	0.4260	0.1683
Ratio of members older than 60	0.4538	0.6964	-0.2426	0.1631
Household size	-0.0791	-0.0832	0.0041	0.0596
Household size squared	0.0043	0.0010	0.0033	0.0051
Ratio of household members with technical degree	0.2068	0.5600	-0.3532	0.1442
Ratio of household members with post-secondary education	0.0930	0.7595	-0.6666	0.2949
Area of annual crop land per capita (m ²)	0.6678	-0.0696	0.7374	0.2134
Area of perennial crop land per capita (m ²)	0.1766	0.2336	-0.0570	0.1623
Forestry land per capita (m ²)	0.0920	-0.1467	0.2387	0.1004
Area of aquaculture water surface per capita (m ²)	1.7710	0.3595	1.4114	0.4784
Have road to village	-0.0309	0.0437	-0.0746	0.0487
Distance to nearest daily market (km)	-0.0020	-0.0124	0.0104	0.0037
Time effect (dummy 2004)	0.3300	0.2943	0.0357	0.0078
Constant	4.3226	4.3093	0.0133	0.1718
Test: Ho: difference in coefficients not systematic				
Chi - square statistic	65.69			
P-value	0.000			

Source: Estimation from panel data of VHLSS 2002-2004.

Table A.8. Hausman tests of fixed-effect and random effect regressions of logarithm of per capita education expenditures (with control variables)

<i>Explanatory variables</i>	<i>Fixed-effect regression</i>	<i>Random-effect regression</i>	<i>Difference</i>	<i>Std. err. of difference</i>
Receipt of international remittances (dummy variable)	0.0683	0.2511	-0.1828	0.0684
Receipt of internal remittances (dummy variable)	0.1331	0.2320	-0.0989	0.0371
Ratio of members younger than 16	1.2417	1.6769	-0.4351	0.1800
Ratio of members older than 60	-1.7791	-2.5045	0.7254	0.1763
Household size	1.0030	0.9963	0.0067	0.0631
Household size squared	-0.0669	-0.0697	0.0027	0.0054
Ratio of household members with technical degree	-0.7428	0.2997	-1.0425	0.1425
Ratio of household members with post-secondary education	-1.1572	1.0565	-2.2137	0.3131
Area of annual crop land per capita (m ²)	0.2737	-0.1508	0.4245	0.2243
Area of perennial crop land per capita (m ²)	-0.2528	0.1585	-0.4113	0.1622
Forestry land per capita (m ²)	0.0695	0.1518	-0.0823	0.0975
Area of aquaculture water surface per capita (m ²)	-0.3779	0.2399	-0.6179	0.4997
Have road to village	-0.0340	0.0737	-0.1077	0.0473
Distance to nearest daily market (km)	0.0030	-0.0211	0.0241	0.0037
Time effect (dummy 2004)	0.3093	0.2911	0.0182	0.0080
Constant	0.3495	0.4339	-0.0844	0.1738
Test: H ₀ : difference in coefficients not systematic				
Chi – square statistic	173.1			
P-value	0.000			

Source: Estimation from panel data of VHLSS 2002-2004.

Table A.9. Hausman tests of fixed-effect and random effect regressions of logarithm of per capita other non-food expenditures (with control variables)

Explanatory variables	Fixed-effect regression	Random-effect regression	Difference	Std. err. of difference
Receipt of international remittances (dummy variable)	0.1332	0.2651	-0.1319	0.0227
Receipt of internal remittances (dummy variable)	0.1189	0.1119	0.0071	0.0123
Ratio of members younger than 16	-0.3462	-0.6653	0.3190	0.0598
Ratio of members older than 60	-0.3541	-0.4134	0.0593	0.0586
Household size	-0.1848	-0.0814	-0.1034	0.0210
Household size squared	0.0095	0.0004	0.0091	0.0018
Ratio of household members with technical degree	0.3178	0.8651	-0.5473	0.0473
Ratio of household members with post-secondary education	0.5002	1.5015	-1.0013	0.1040
Area of annual crop land per capita (m ²)	0.4927	0.3632	0.1295	0.0745
Area of perennial crop land per capita (m ²)	0.0818	0.2847	-0.2029	0.0538
Forestry land per capita (m ²)	0.0719	0.0538	0.0181	0.0323
Area of aquaculture water surface per capita (m ²)	0.5879	0.7971	-0.2092	0.1659
Have road to village	-0.0013	0.0230	-0.0243	0.0157
Distance to nearest daily market (km)	-0.0011	-0.0102	0.0091	0.0012
Time effect (dummy 2004)	0.2079	0.1860	0.0219	0.0027
Constant	7.4926	7.1211	0.3715	0.0577
Test: Ho: difference in coefficients not systematic				
Chi - square statistic	289.23			
P-value	0.000			

Source: Estimation from panel data of VHLSS 2002-2004.

Table A.10. Fixed-effect regressions of household welfare with interactions between remittances and urbanity (with sampling weights and cluster correlation)

Explanatory variables	Logarithm of per capita income	Logarithm of per capita expenditure	Logarithm of per capita food expenditure	Logarithm of per capita healthcare expenditure	Logarithm of per capita education expenditure	Logarithm of per capita other non-food expenditure
Receipt of international remittances (dummy variable)	0.2246*** [0.0452]	0.0964*** [0.0329]	0.0575* [0.0302]	0.0816 [0.1193]	0.0563 [0.1568]	0.1241** [0.0515]
Receipt of international remittances (dummy variable)	0.0345 [0.0243]	0.0532*** [0.0176]	0.0123 [0.0172]	0.1477** [0.0739]	0.1590** [0.0797]	0.0944*** [0.0267]
Interaction: international remittances*urban	-0.0823 [0.0796]	-0.0145 [0.0621]	-0.0522 [0.0526]	0.0499 [0.2154]	0.0324 [0.3040]	-0.0105 [0.0873]
Interaction: internal remittances*urban	0.0892* [0.0474]	0.0524 [0.0335]	0.0336 [0.0347]	-0.0841 [0.1579]	0.0763 [0.2013]	0.0713 [0.0483]
Ratio of members younger than 16	-0.3608*** [0.0798]	-0.2911*** [0.0544]	-0.2137*** [0.0459]	0.1389 [0.2020]	1.2705*** [0.2690]	-0.3253*** [0.0874]
Ratio of members older than 60	-0.2913*** [0.0699]	-0.2309*** [0.0546]	-0.1331*** [0.0446]	0.5366*** [0.2031]	-1.7987*** [0.2873]	-0.3609*** [0.1115]
Household size	-0.1055*** [0.0260]	-0.1362*** [0.0191]	-0.1273*** [0.0162]	-0.0838 [0.0751]	1.0419*** [0.1206]	-0.1898*** [0.0311]
Household size squared	0.0035* [0.0020]	0.0062*** [0.0017]	0.0057*** [0.0014]	0.0047 [0.0062]	-0.0697*** [0.0105]	0.0096*** [0.0026]
Ratio of household members with technical degree	0.2990*** [0.0643]	0.2682*** [0.0559]	0.2142*** [0.0462]	0.1925 [0.2268]	-0.6557** [0.2679]	0.3157*** [0.1004]
Ratio of household members with post-secondary education	0.3712*** [0.1060]	0.3099*** [0.1142]	0.3771*** [0.0852]	0.0866 [0.3887]	-0.9522 [0.6687]	0.4618*** [0.1656]
Area of annual crop land per capita (m ²)	0.4903*** [0.1549]	0.3273*** [0.0719]	0.2873*** [0.0608]	0.5582* [0.3107]	0.3078 [0.3350]	0.4316*** [0.1061]
Area of perennial crop land per capita (m ²)	0.2152 [0.1453]	0.1180* [0.0656]	0.1031 [0.0746]	0.1476 [0.1716]	-0.2928 [0.2205]	0.0919 [0.0976]

Table A.10. (continued)

Explanatory variables	Logarithm of per capita income	Logarithm of per capita expenditure	Logarithm of per capita food expenditure	Logarithm of per capita healthcare expenditure	Logarithm of per capita education expenditure	Logarithm of per capita other non-food expenditure
Forestry land per capita (m ²)	0.1800** [0.0712]	0.1027** [0.0486]	0.0897** [0.0408]	0.1096 [0.1698]	0.0129 [0.1335]	0.1395 [0.1060]
Area of aquaculture water surface per capita (m ²)	0.6952** [0.2817]	0.3379** [0.1620]	0.1518 [0.1553]	1.5822** [0.7620]	-0.5354 [0.7635]	0.5909** [0.2659]
Have road to village	-0.021 [0.0244]	-0.0197 [0.0183]	-0.0106 [0.0201]	-0.0339 [0.0779]	-0.0346 [0.0708]	-0.0063 [0.0281]
Distance to nearest daily market (km)	0.002 [0.0014]	0.0003 [0.0011]	0.0012 [0.0012]	-0.0005 [0.0055]	0.0037 [0.0048]	-0.0011 [0.0020]
Time effect (dummy 2004)	0.1645*** [0.0103]	0.1324*** [0.0079]	0.0468*** [0.0080]	0.3496*** [0.0326]	0.2916*** [0.0357]	0.2053*** [0.0116]
Constant	8.6380*** [0.0821]	8.5155*** [0.0567]	7.8112*** [0.0504]	4.3590*** [0.2374]	0.2558 [0.3563]	7.5642*** [0.0894]
Observations	8016	8016	8016	8016	8016	8016
Number of i	4008	4008	4008	4008	4008	4008
R-squared	0.20	0.22	0.20	0.05	0.22	0.17

Source: Estimation from panel data VHLSS 2002-2004.

Notes: Standard errors in brackets.

* significant at 10%, ** significant at 5%, *** significant at 1%.

BALANCING PRIVATE SECTOR DEVELOPMENT AND LOCAL-CENTRAL RELATIONS

Edo Andriesse*

Although academics, civil servants and non-governmental organizations involved in development have continued to promote policies for local economies, many localities fail to catch up with average national development patterns. The body of knowledge on this topic has been split into two parts: private sector development (PSD) and local-central relations (LCR). This article argues that, in order for policies to be effective, PSD and LCR should be analysed simultaneously. Drawing on evidence from empirical work conducted in South-East Asia, the article offers policymakers some ways forward. Important features to be reckoned with are the sequencing of policies, the problem of historically rooted disabling institutions, the benefits of local enabling institutions, ethnic tensions and structural opposition from central Governments.

I. INTRODUCTION

Although academics, civil servants and non-governmental organizations (NGOs) have continued to promote policies for subnational economic development, many peripheral localities fail to catch up with average national development patterns (Coe and others 2007, pp. 57-183). This is particularly a problem in densely populated poor developing areas, such as the remote islands in the Philippines, many parts of Bangladesh, Rwanda and Haiti and southern Mexico. In such areas, outmigration to find employment elsewhere and sending remittances to relatives is not enough to create sustainable and resilient local economies. Moreover, excessive migration to booming cities leads to congestion and environmental pollution, as can now be observed in many large metropolitan areas. But in developed nations also, local economic development has remained an issue of importance (Braczyk

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and others 2003; Pike and others 2006). The southern part of Italy still lags behind the central and northern parts, but perhaps the most striking example is the small country of Belgium. The French-speaking part of Belgium suffers from relatively high unemployment and both French and Flemish-speaking localities have serious problems with the federal Government in Brussels. Indeed, the World Bank (2005, p. 204) has rightly pointed out that:

“Chronic regional underperformance can give rise to many concerns and threaten national unity—lost economic potential, unfairness in regional opportunities, potential instability, loss of social cohesion, and adverse social consequences, including higher crime and disease”.

The literature on policy-related practices related to local and regional economic development has generally been split into two parts: one part is concerned with private sector development (PSD) and deals with topics such as entrepreneurship, access to finance and the enhancement of local competitive strengths (among others Ettlinger 1999; Schulpen and Gibbon 2002; United Nations Development Programme Commission on the Private Sector and Development 2004). It is important to keep in mind that PSD also makes sense in rural areas given the increasing role of off-farm employment and insertion in global value chains (Ashley and Maxwell 2001; Rutten 2003; Andriesse and van Helvoirt forthcoming). The other part investigates how local-central relations (LCR) enable or disable the functioning of local economies (consider, for instance, the issues of geographically based budgeting, decentralization, and networks of members of parliament). This part normally has a somewhat more holistic perspective and benefits from the fields of politics, sociology and public administration (among others Melvin 2001; Crook 2003; Jomo and Wee 2003; Panday 2006). This article argues that, in order for policies to be effective, both PSD and LCR should be analysed simultaneously. Only by integrating these two phenomena can sustainable and resilient local economies be created. Drawing on evidence from empirical work conducted mainly in South-East Asia, the article indicates some ways in which simultaneous analyses and integration could take place. It consists of three major parts: the next section introduces the main bodies of knowledge on PSD and LCR; this is followed by a section in which the justification for integrating these two bodies of knowledge is presented. Based on the integrative section, the third part offers five policy tools/issues that would be beneficial for enhancing local economic capabilities. The last part presents conclusions.

II. PSD AND LCR: TWO SEPARATE BODIES OF KNOWLEDGE

Advocates of PSD view the firm as a central organization for the creation of employment and income and, ultimately, as a vehicle for poverty reduction. In this regard, Ettlinger (1999) has conceptualized development as the convergence of corporate and worker well-being. In her perspective, local development occurs “when 1) the local, independent corporate sector achieves sustainable competitiveness, thereby sustaining local employment, and 2) worker well-being is achieved”. Unfortunately, economic geographers have paid relatively little attention to developing areas. Journals such as *Regional Studies*, *Entrepreneurship and Regional Development*, *Economic Geography* and *Journal of Economic Geography* mainly publish theoretical and empirical work related to the developed world and the innovative capacity of such industries as fashion design, information and communications technology, automobiles and pharmaceuticals. This is a pity as economic geographers are well equipped to study subnational economies. For example, they could consider the topics of infrastructure, core-periphery relations, rural-urban linkages and migration. But perhaps one of their greatest strengths is the systemic analysis of coordination and cooperation among firms. Economic geographers such as Yeung (2000), Braczyk and others (2003), Boschma and Frenken (2006) and Coe and others (2007, pp. 321-347) have stressed the need to scrutinize the effectiveness of cooperative and coordinative institutions, subnational economic cultures and the changes that have occurred in these institutions and cultures over time. Note that Douglas North’s (1990) definition of institutions is followed here: “formal institution” refers to rules, regulations and contracts, and “informal institutions” refer to norms of behaviour and conventions. These issues are relevant not only in high-tech, innovative economies in the developed world, but also in many less prosperous areas. For instance, Helmsing (2001) has shown that chambers of commerce play important roles related to cooperation and networking within many Latin American local economies; Lyon (2003) does the same for Ghana, Callahan (2002) for Phuket, Thailand, and Van Helvoirt (2007) for the central Philippines. Schulpen and Gibbon (2002) have complained about the lack of analytical capacity on the part of aid agencies with respect to identifying the “strengths, weaknesses and dynamics of local private sectors”. One of the solutions could be to recognize the usefulness of the explicit economic-geographical focus on local entrepreneurial arrangements. Scholars of management sciences have also addressed PSD, but more on a national and international level. Here, a good example is *guanxi*, a set of specific *informal institutions* used by Chinese entrepreneurs in China and South-East Asia, which enables entrepreneurship and in which personal connections are often key drivers. Park and Luo (2001) wrote that *guanxi* “reflects delicate fibres woven into every person’s social life and every

aspect of Chinese society” and it is “transferable among parties, reciprocal, intangible and utilitarian rather than emotional”. A number of studies confirm the economic relevance of these informal institutions (Bjerke 2000; Carney and Gedajlovic 2001; “Vincent Lo, The King of Guanxi”, *The Economist*, 23 September 2004).

A topic that is investigated for firms both in the developed and the developing worlds is access to finance. Protagonists of the “varieties of capitalism” approach distinguish between banks, stock markets and public finance (see, for instance, Schmidt 2003). Nowadays, partly inspired by the 2006 Nobel Peace Prize awarded to the Grameen Bank and its founder, Muhammad Yunus, microcredits, loans for small firms and a variety of informal financial arrangements receive much attention from development experts and NGOs. The high-profile United Nations Development Programme’s Commission on the Private Sector and Development (2004) argues that broader financing options are needed, a possible source being remittances from international labour migrants. Indeed, such countries as the Philippines and Mexico rely heavily on remittances. Investing remittances in PSD represents a promising mechanism for local development in those countries. The Commission also promotes the sharing of knowledge. Currently, there are many different (micro) credit schemes in developing countries, which increases the opportunities for them to learn from one another. In fact, Mendoza and Thelen (2008) provide answers for the question how to broaden financing options. One of the issues they discuss deals with “group lending to serve low-income markets” in order to lower transactions costs and overcome both market and government failures. Banks such as Grameen in Bangladesh and Accion (based in Boston, United States of America) offer loans to groups of three to nine borrowers. This group lending has two advantages: (a) as borrowers generally belong to the same group of creditors, it can deal with the challenges of imperfect information by using information from borrowers to acquire knowledge about borrowers in the same group; (b) it enables the borrowers, who know each other well, to impose effective non-financial sanctions on each other in case some members of the group cannot meet their repayment responsibility. According to Mendoza and Thelen (2008), “there is evidence to suggest that group-lending strategies have a positive impact on the financial self-sustainability of the lending operations of microfinance organizations (Cull and others 2007; Karlan 2007)”.

A totally different group of scholars looks at regional economies from the perspective of LCR rather than the internal entrepreneurial capacities of localities. The body of knowledge on the political and economic relations between central and local governments views the firm as one of the drivers of creating resilient and sustainable local economies, not as the *main* driver. Instead, in essence this body

claims that effective and efficient LCR provide the best incentives for increasing living standards. Consequently, much theoretical and empirical work has appeared on a variety of ineffective and inefficient forms of LCR, such as excessive favouring of certain localities by central politicians, particularly members of parliament, corruption, problems of decentralization and the disadvantages of appointed local politicians. Well-known journals for this type of work are *Regional and Federal Studies*, *Political Geography*, *Public Administration and Development*, *Asia Pacific Journal of Public Administration* and *The China Quarterly*.

Before engaging in empirical inquiries and enacting policies that might reduce inefficient and ineffective LCR, it is imperative to bear in mind that the political functioning of localities is complex for various reasons. Each locality considers itself unique and tries to develop itself in many fields in order to achieve greater welfare and well-being, not only in absolute terms but also in relation to other localities in a country. Local politicians often feel responsible for the local population and will bargain and negotiate in the capital city for more financial and other resources in order to support a wide range of things, such as education, housing and land-use planning (Flint and Taylor 2007, p. 261). It is even possible for localities together with their politicians to oppose central Governments, which at the very worst may lead to violence and even civil war. Simultaneously however, a local government forms a part of the wider constellation of national government agencies. Central governmental authorities have often identified regional borders and regard local political organizations merely as instruments and frequently have the legal power to appoint local politicians. In short, in the words of Flint and Taylor (2007): "the most important characteristic of the local state is the ambiguity of its role. This is because it is part of the central State apparatus, but it can also be used to oppose the central State".

As LCR issues are highly complex and relatively more holistic compared to PSD, empirical work has tended to focus on identifying problems rather than detailed policy prescriptions. Below, three main issues are briefly discussed. First, LCR has often been structured by ethnicity (Dwyer and Drakakis-Smith 1996). In the context of African countries, Crook (2003) argues that:

"If a regime is nervous about providing an institutional base for subnational, regional or ethnic political rivals or even political separatists...then it will often adopt a decentralisation scheme that deliberately fragments potential local power bases into smaller, weaker, politically insignificant units. This is often combined with central funding and control mechanisms that permit spatial redistribution and/or centrally focused patronage linkages".

Such decentralization schemes and funding and control mechanisms could obviously give rise to “chronic regional underperformance”, to use the World Bank’s (2005, p. 204) term, and in turn instability and violent conflicts. Indeed, in several African countries, LCR have been severely influenced by ethno-local politics, for instance Kenya, Uganda, Nigeria and Cote d’Ivoire (Crook 2003 and 1997). Two good current examples outside Africa are Bolivia and Georgia. The central Government of Bolivia aims to finance pro-poor policies by extracting resources from rich provinces in which relatively many non-indigenous persons live. These persons have protested vigorously against these policies. Problematic LCR between the national Georgian Government and ethnic Russians in the provinces of South Ossetia and Abkhazia led to a military intervention by the Russian army and even heated tensions between, on the one hand, the Russian Federation and, on the other hand, the European Union and the United States of America.

In fact, the collapse of the Union of Soviet Socialist Republics resulted in an array of potential LCR conflicts in the newly independent countries, due to new ethno-local political constellations and the mismatch of new formal institutions and historically rooted informal institutions.

As in discussions regarding PSD, the issue of informal institutions must be addressed; this brings us to the second empirical issue of LCR. Melvin (2001) demonstrates that, in Kazakhstan, Kyrgyzstan and Uzbekistan, the role of informally arranged LCR is more important than rules and regulations. This is not a threat if informal institutions are *enabling*, thus increasing the effectiveness and efficiency of LCR, but they become a serious problem if they are *disabling*. In many Asian countries, a pervasive disabling institution is the “convention” that politicians (especially members of national parliaments) and civil servants favour their home localities and localities that vote for their parties instead of reducing regional and local inequalities. Pempel (1998, p. 62) has documented this practice for Japan, Park (2003) for the Republic of Korea and Panday (2006) for Bangladesh.

The third issue is local elite capture, which is often a consequence of flaws in decentralization programmes (Johnson 2001). The term “elite capture” refers to the grabbing of a specific portion of available resources (for example, from international donor agencies) by local elites and leaving the leftovers to the poor (Khan 1998). In this regard, Bardhan (2002) asserts that “any discussion of delivery of public services has to grapple with issues of capture of governments at different tiers by elite groups more seriously than is the custom in the decentralization literature”. Elite capture has more chances to flourish if informal disabling institutions dominate LCR and if budgetary practices are insufficiently transparent. An infamous variant of elite capture has been the *chao pho*, a local

“godfather” in Thailand, somewhat comparable to southern Italian mafia traditions (see box 1).

Box 1. *Chao phos* in Thailand

Chao phos are a sort of provincial “godfather” in Thailand. According to Chantornvong (2000), Thai people consider a *chao pho* as someone “whose influence is recognized not only by his own people but also by high-ranking government officials. In the eyes of the public, a *chao pho* is someone who can use his influence to further his interests in complete disregard of the law”. The first generation of regional *chao phos* were often Sino-Thai merchants who did not intervene in regional or local politics. They only *bought* protection and licences from government officials to secure their business interests. The second generation decided to become much more involved in local, regional and national politics. This generation started to achieve economic and political successes from the 1960s onwards. In 1991, the Police Department identified a total of 168 *chao phos* in Thailand. It is generally acknowledged that weak formal LCR greatly facilitated the emergence of *chao phos* (see, for instance, Wingfield 2002, and Mutebi 2004).

The most infamous *chao pho* has been Mr. Somchai Khunpleum from Chonburi province (East of Bangkok), better known as Kamnan Po (normally, a *kamnan* is the highest-ranking government official of a subdistrict or *tambon*). Kamnan Po was a very influential businessman with investments in many industries, most of them illegal. His influence even extended into national politics. Several members of parliament (including two of his sons) were elected as a result of his efforts. He maintained a huge network of assistants and financed the election campaigns of politicians who would secure his business interests (Chantornvong 2000).

Another phenomenon is the *trakun*: an influential family at the provincial level as described in Askew (2006) and Nelson (2005). Examples of *trakun* are the Suwannawong family in Songkhla, the Chaisaeng family in Chachoengsao and the Tiayaphairat and the Chongsuthanamani families in Chiang Rai. These families generally have an important position in the private sector at the provincial level and are also politically active.

Thus, PSD and LCR in Thailand have been significantly influenced by private interests and family-related political dynamics, especially in the 1990s.

III. THE ADVANTAGES OF INTEGRATING PSD AND LCR

The previous section has outlined the main current insights into PSD and LCR. The former has a rather specific character, and much policy-related work has already appeared. The main strength of the body of knowledge and policies on PSD is its recognition of the potential capabilities of local entrepreneurs and the desire to raise living standards indigenously. When the local private sector succeeds in taking advantage of economic opportunities in an inclusive and sustainable manner, local economies are not dependent on central Government funding that may be unstable or insecure. Nevertheless, the limitation of an isolated focus on PSD is that it neglects three possibilities: first, disabling LCR resulting from a variety of conflicts, for instance ethno-local political conflicts, could obstruct PSD; second, the local private sector might be too divided by, again, a variety of conflicts, making some sort of central Government intervention funding necessary; third, in case the private sector is virtually absent in local economies, enabling LCR could be warranted in order to kick-start PSD and raise living standards.

In the light of these opportunities and limitations, a conceptual integration of PSD and LCR would seem welcome. Before a taxonomy can be introduced to enable such integration, there is a discussion of some empirical works on local economies in South-East Asia that have begun to find ways for simultaneous analyses. To begin with, several publications have acknowledged that the firm is not always the most likely candidate to spearhead PSD. At a macroeconomic and international level, it should be taken into account that the public sector has been a key driver of economic development in South-East Asia. Consider, for example, the huge financial capabilities of Temasek Holdings, an investment agency controlled by the Government of Singapore. Although many view Singapore's economy as a prime example of neo-liberal capitalist development, Temasek Holdings is a 54 per cent shareholder in Singapore Airlines, one of the most highly regarded and profitable airlines in the world; it owns 58 per cent of Indonesian Bank Danamon and 42 per cent of Thailand's Shin Corporation (Temasek Holdings 2008). More relevant for lagging local economies, Altenburg and von Drachenfels (2006) propose a breakaway with "minimalist" approaches towards PSD and are in favour of public policies that facilitate the growth of competitive industries, such as research and development and linking formalized successful firms with informal small-scale firms. They do not, however, tackle the issue of LCR.

Elvinia (2005), in an insightful study of Zamboanga City in the southern Philippines, has explicitly mentioned LCR as one of the determinants of local economic development. He concludes that decentralization has led to a certain degree of importance of the local government in terms of the support for small and

medium enterprises (SMEs). Simultaneously, however, Zamboanga City's civil servants are constrained in their capabilities, "partly because the central Government is taking a strong lead". This conclusion clearly demonstrates that PSD is not only an endeavour of local private and public actors, but also of the central Government of the Philippines. Nevertheless, in this case it is rather difficult to judge whether LCR are enabling or disabling. On the one hand, Elvinia (2005) states that the central Government has facilitated export successes; on the other hand, the functions of the local government are limited to a mere executing rather than a leading role. Therefore, the Government of the Philippines does not seem to have increased the capabilities or responsibilities of civil servants in Zamboanga City. He further concludes that:

"...it is most likely impossible that they [SMEs] can survive in the long run, unless they receive continued support. This creates a dilemma for SMEs: how to balance dependence on the government, vulnerability to global changes (e.g., international standards), and difficulties to grow by themselves".

It is precisely this balancing problem that necessitates a thorough understanding of the interdependencies between PSD and LCR.

Another study on the Philippines made a comprehensive effort to obtain insights into regional and local development. In their book, *The Dynamics of Regional Development: The Philippines in East Asia*, Hill and others (2007) cover many issues that are relevant for both PSD and LCR and ultimately local and regional development, such as insertion in global value chains, regional disparities over time and the effects of decentralization. Nevertheless, in the section on policy implications they do not pay much attention to the role of informal institutions and local elite capture. They mention the notion of the "strongly personalistic nature of Philippine politics", but do not connect it explicitly to its consequences for policy-related issues. This is a pity, as several publications have demonstrated the significance of these two roles. Van Helvoirt (2007), for instance, shows that patterns of PSD vary considerably across the central Philippines due to various manifestations and qualities of informal networking among entrepreneurs. As informal institutions are often historically rooted, it is imperative to include them in the equation when it comes to policy formulations. It is highly unlikely that any policy on PSD and LCR will succeed if it is running against local conventions and norms of behaviour.

Within South-East Asia, the vast archipelago of over 17,000 islands known as Indonesia obviously needs to be addressed. Although many publications can be found on either PSD (Ndoen and others 2000; Rutten 2003; World Bank 2006)

or LCR (Kristiansen and Pratikno 2006; Kristiansen and Santoso 2006; Setiawan and Hadi 2007), there are only a few authors who address these issues simultaneously. Perhaps one of the most insightful integrated analyses comes from Hadiz (2004), who presents a wealth of evidence on the effects of the post-Suharto decentralization programme, particularly as a result of fieldwork in Yogyakarta and Medan. A major strength of this publication is the attention paid to the remarkable response of provincial elites between 1999 and 2003. According to him, the devolution of economic and political power to the provincial and subprovincial levels has caused a variety of problems for PSD. First, local politicians introduced new levies on businesses “much to the distress of the local business community”. Second, decentralization has led to a lack of budgetary clarity. In Yogyakarta one top bureaucrat admitted that he had little idea of the financial ramifications of increased regional budgetary power, just a few weeks before the implementation date of January 2001. Third, local political and business elites have greatly captured provincial and subprovincial resources, sometimes even involving violence and crime/youth organizations. Hadiz (2004) calls this capturing of resources “predatory interests” and, as such, he views it as the devolution of elite capture from Jakarta to the provinces. Fourth, local economies without many natural resources have started to face limitations regarding revenue-raising possibilities. Eventually, conflicts between resource-rich and resource-poor provinces could lead to tensions similar to the current Bolivian case, as mentioned above. In sum, Hadiz (2004) shows how LCR can impinge upon opportunities for inclusive PSD and how provincial elites manage to (re)secure their interests within the changing dynamics of public administration.

Other evidence on the interplay between PSD and LCR has been documented in Andriesse (2008) and Andriesse and Van Westen (2008). In a comparative analysis of institutional arrangements between the bordering regions of Satun (southern Thailand) and Perlis (northern Malaysia), there is ample evidence of the powerfulness of scrutinizing PSD and LCR simultaneously.¹ Satun has had many opportunities for PSD due to low labour costs, a dynamic ethnic Chinese entrepreneurial community with easy access to finance and the insertion of the Thai seafood industry into global food markets. These opportunities have even compensated for weak LCR: stressful party politics; an appointed governor who is not inclined to raising living standards but looks forward to being promoted to

¹ This empirical research, conducted between 2004 and 2006, consisted of questionnaires and semi-structured interviews and a social network analysis. It involved 213 actors: firms' owners, bank managers, chairpersons of business associations, civil servants, local politicians and the local journalists. A detailed overview of the methodology can be found in Andriesse (2008).

more strategic, Buddhist, provinces; and the Bangkokian image of Satun as a province that does not matter (Andriesse 2008; Andriesse and Van Westen 2008).

Table 1. Socio-economic indicators in Satun, Thailand, and Perlis, Malaysia

	<i>Year</i>	<i>Satun</i>	<i>Perlis</i>
Total population	1990	227 000	188 000
	1995	244 000	209 000
	2004	274 000	218 000
Percentage of labour force working in agriculture	1990	74	33
	2004	57	15
Per capita gross regional product (US\$)	2004	1 630	2 589
Number of teachers at secondary school	1990	547*	1 037
	1995	690	1 250
	2004	1 105	1 970
Number of hospital beds	1990	..	404
	1995	250	404
	2004	366	404
Registered cars (plus pick-ups for Satun)	1990	3 781	8 920
	1995	4 666	..
	2004	10 118	10 969

Sources: Thailand 2005, 1996, 1994, and Malaysia 2005, 1996 and 1990.

Notes: An asterisk (*) indicates data for 1993.

Two dots (..) indicate that data are not available or are not reported separately.

Two problems with PSD in Satun are the lack of inclusiveness and the natural environment. PSD is not inclusive at all because the majority of the population, who are Muslims of Malay descent, is virtually absent from the private sector and faces great difficulties in gaining access to finance.

Regarding the natural environment, Satun has followed unsustainable business practices that may well undermine the current economic model. “Unfettered private development of fisheries and aquaculture may well exhaust the natural resource base before diversification into other industries has sufficiently progressed” (Andriesse and Van Westen 2008). In contrast, extremely strong and enabling LCR have resulted in a public sector that has transformed Perlis from an agricultural state to a state based on manufacturing in the 1990s and public services (notably education) since the beginning of the new millennium. Table 1 displays socio-economic differences between Satun and Perlis. It shows that, whereas the

total population of Perlis is lower than that of Satun, there are more teachers at secondary schools, more hospital beds and more cars.² Moreover, in Perlis there are several technical colleges and other post-secondary educational institutes, but in Satun there are none. Therefore, it is safe to conclude that enabling LCR have expanded social capabilities in Perlis. But, although standards of living in Perlis are significantly higher than in Satun, PSD is not flourishing as it should because firm owners are more concerned with winning government tenders than with cooperating and coordinating among themselves. In addition, ethnic Chinese and Malay entrepreneurs are not willing to work together. This comparison provides some clues as to the differences between peripheral regions in general.

The World Bank (2005, p. 204) has come up with a taxonomy of peripheral regions based on the number of poor people per square kilometre and market access. In this framework, north-eastern Thailand and peripheral regions in Bangladesh are regions with high poverty density and low market access, while old industrial regions in the United Kingdom and the United States are shown as having low poverty density and high market access. But as it is, this taxonomy does not provide much explanatory power for the causes of regional or local underperformance. Hence, in this article an institutional taxonomy for peripheral regions is proposed on the basis of opportunities for PSD and for LCR (see table 2).

Table 2. A taxonomy of PSD and LCR for local peripheral economies

		<i>Opportunities for inclusive PSD</i>	
		<i>Many</i>	<i>Few</i>
Opportunities for enabling LCR	Many	A	C
	Few	B	D

With respect to PSD, inclusiveness is vital in order to create growing and balanced patterns of entrepreneurship. Excluding specific parts of local populations in economic activity might lead to tensions, unemployment and excessive forms of outmigration of persons aged between 20 and 50 years, and even violent incidents.

² The total population of Perlis might be lower in reality as states prefer to report a high number to the federal Government in order to receive more grants. In this respect, Thai data seem to be more reliable.

Unfortunately, it is not known how many pick-ups are registered in Perlis. Out of 3,781 vehicles in 1990, 3,034 were pick-ups, which are very popular in rural Thailand. Out of 10,810 in 2004, 7,887 were pick-ups.

With respect to LCR, an enabling environment could lead to better PSD. In the case of very few comparative advantages, enabling LCR is likely to result in a more effective public-sector driven economy, for instance the provision of public services without elite capturing practices. A locality situated in block “A” of table 2 no longer needs much policy assistance, as opportunities for both PSD and LCR are promising. Localities in block “B” wish to have better relations with central Governments only in case PSD is hampered by disabling LCR. In this case, policymakers and politicians should find ways to create a more enabling environment. The third possibility for a locality is to be positioned in block “C”. Here, neo-Keynesian local economic development policies might kick-start PSD, for example by guiding entrepreneurs from obsolete uncompetitive businesses towards new comparative advantages, triggering economic activities based on public services; such policies might also foster mutual understanding between ethnic groups. Obviously, the worst off are localities in Block “D”. Designing and implementing policies for the inhabitants of such areas is likely to be very difficult—in some cases impossible—due to mental walls dividing ethnic communities, a range of historically rooted disabling institutions and various forms of elite capture. It is also possible that central Governments will prevent such areas from prospering as a result of geopolitical interests *within* countries. Therefore, it is advisable to call in the help of international donor agencies. NGOs could take a lead role in designing PSD-related strategies. If a locality does not have any viable comparative advantage, the option of outmigration should be considered. Hill and others (2007) also conclude that outmigration might sometimes be the best solution in impoverished Philippine regions, but it should be noted that excessive rural-urban flows of labour generally give rise to congestion, insecure informal economies and slums in large metropolitan areas. Walking through Metro Manila and Metro Cebu, one can indeed find evidence of such negative impacts. During the aftermath of the 1997 Asian financial crisis, many poor inhabitants of Bangkok and Jakarta returned to their rural homelands because agricultural activity was less affected than urban-based manufacturing and services (Firman 1999; Webster 2004). Outmigration is therefore not a sustainable long-term solution if it remains limited to a relocation of socio-economic problems. Policies facilitating outmigration should be implemented cautiously. In sum, this section has shown that an analytical balance between PSD and LCR could provide clues as to how living standards in local peripheral economies could be enhanced. In the following section, five policy tools/issues are proposed on the basis of the empirical insights presented above and the taxonomy in table 2.

IV. POLICIES THAT MAY INCREASE LOCAL ECONOMIC CAPABILITIES

Sequencing effectively

Obviously, a first crucial outcome of this article is the requirement for policymakers to be able to find out in what block of table 2 designated local economies are situated before any strategies are formulated. Then, given the complexities of fostering local economic development, effective sequencing of policies is needed. A major prerequisite is a policy atmosphere that can, if necessary, address both PSD and LCR. For instance, it would be ineffective to create massive and costly PSD schemes for localities that find themselves in blocks "A" or "B" of table 2. Recently, the weekly *Time* commented on the economic problems in Indonesia generated by the 1999 decentralization programme.³ For many Indonesian provinces, LCR has become so vague and blurred that *Time* suggested the Government should "demarcate federal, provincial and local powers, and reconcile conflicting laws". Hence, in the Indonesian case it is likely that, in the current institutional environment, focusing on LCR before PSD makes more sense than the other way round. For localities in block "D" without the prospect of improved LCR in the short term, however, it might be better to more or less neglect the central Government and instead try to find ways to increase living standards by PSD. The case of Satun in southern Thailand, as outlined in the previous section, demonstrates that local economic growth (albeit not inclusive) is possible with a single-pronged approach. Therefore, it is important to acknowledge that sequencing is not only dependent on theoretical economic logic, but also on political and institutional geographical settings.

Addressing the problem of historically rooted disabling local institutions

Much more attention should be paid to the problem of historically rooted disabling institutions that obstruct PSD and LCR. In particular, LCR-related policies have paid insufficient attention to local disabling institutions that adversely influence decentralization programmes and to the effects of top-down policies creating a variety of mismatches at the local level. While designing policies, one should certainly take into account the informal ways of practising local politics that sustain inequality within communities. Another issue is the dilemma of appointed versus elected local politicians. It is generally perceived that more democracy is conducive for greater transparency and accountability, but where strong disabling institutions are present, transforming the political system from appointed to elected politicians

³ Michael Schuman, "What's holding Indonesia back?" *Time*, 11 September 2008, pp. 24-28.

might lead to the unintended outcomes of vote-buying, elite capture (predatory interests) and ultimately exclusive rather than inclusive socio-economic development.

Capitalizing on local enabling informal institutions

One of the major points in the recommended actions in the United Nations Development Programme's Commission on the Private Sector and Development (2004, p. 39) report is the need to formalize economies: to transform informal ways of doing business into formalized institutional arrangements. Nevertheless, the empirical findings on local and regional economic development in South-East Asia suggest that informality is not a priori detrimental to economic performance. Local entrepreneurial communities could flourish without contracts or formal loans if transaction costs were sufficiently reduced through informal ways of cooperation and coordination, generating high levels of trust. In this respect, Elvinia (2005) has argued that the development agendas of SMEs should be "more profound and reflective of local context" and "above all, public services/support should be *demand driven* rather than *supply-driven*".

Integrating this point and issue 2, policy formulations and implementation for PSD and LCR could perhaps be carried out following the concept of *deliberative development*, as presented by Evans (2004). Evans criticizes one-size-fits-all blueprints for local economic development as adopted by central Governments and Western NGOs based on uniform institutional assumptions that do not hold in social, political and economic realities at the local and regional levels. He based his ideas on, among others, the Nobel laureate Amartya Sen (1999), who views processes of participation as "constitutive parts of the ends of development in themselves", and Rodrik (1999), who favours institutional arrangements that allow for endogenous social and political choices. Evans praises the participatory political institutions that have improved public service delivery in Porto Alegre, Brazil, and that have facilitated higher life expectancies and literacy rates in Kerala, India. The advantage of such a process of policy formulation and implementation is that it increases the chances of overcoming disabling institutions and capitalizing on enabling institutions. The disadvantage is that it is perhaps difficult to implement in heavily centralized countries as politicians and civil servants in central Governments often have predatory interests which they do not wish to jeopardize. Indeed, it is therefore no surprise that Evans took examples from two relatively decentralized countries: Brazil and India.

Taking into account ethnic tensions

The empirical evidence presented in this article shows that ethnic tensions frequently hamper inclusive PSD and effective LCR. In local economies with an entrepreneurial community consisting of one specific ethnic group, PSD policies should focus on lowering divisive ethnic walls or targeting ethnic groups that have thus far been excluded. With respect to LCR, it is possible for local politicians and members of parliament representing a particular locality to originate from a single ethnic group, which would affect their political influence in various tiers of government. Although root causes can, no doubt, be found elsewhere, the *continuation* of the conflict in the troubled southern Thai provinces of Yala, Pattani and Narathiwat is explained by the following mix: relatively rich Thai and ethnic Chinese entrepreneurs, an Islamic majority of Malay descent that does not benefit sufficiently from PSD and very weak LCR as the members of Parliament representing the Islamic population have little influence, while the appointed provincial governors are de facto puppets of the Ministry of Interior in Bangkok. The three provinces unfortunately find themselves deeply trapped in block “D” of table 2. Merely instituting infrastructural works, as was done in recent years, does not feed local economic capabilities. Instead, LCR and PSD policies should try to lower ethnic barriers and reduce the impact of various disabling institutions.

Structural opposition

How can one grapple with central Governments that are structurally opposed to improving economic conditions and the quality of life in certain localities? Inhabitants of localities falling under blocks “B” and “D” of table 2 could ask themselves such a question if they do not receive any effective support from the central Government in the long run. In those cases, there are three options: focusing on PSD, seeking help from NGOs or migrating to better-endowed localities. If a complete overhaul of LCR is possible—for example, after a military coup or a devastating natural disaster, such as the tsunami in Aceh, Indonesia—one should be wary of creating LCR problems in other areas. Due to ethno-local politics, informal institutions and elite capture, a radical change in LCR might be beneficial for locality *x* but detrimental to locality *y*. Malaysia would be a case in point: transforming LCR based on affirmative policies that support the Malay population into pro-poor ethnic-neutral LCR is likely to create some problems in non-impooverished regions that have an above-average share of Malays vis-à-vis ethnic Chinese and ethnic Indians.

V. CONCLUSIONS

This article has shown that balancing private sector development (PSD) and local-central relations (LCR) would be a fruitful endeavour for creating resilient and sustainable trajectories of economic development in peripheral and lagging localities. Most importantly, the integration of PSD and LCR enables a holistic process of expanding existing economic capabilities and fostering new ones. In some localities, more attention will be paid to internal factors; in others, the effects of external factors are the key drivers of economic activity and, ultimately, poverty reduction. Perhaps the greatest threat to the successful balancing of the two bodies of knowledge is the tendency of power holders in central Governments to avoid dismantling disabling institutions if their own (predatory) interests are at stake (Bardhan 2000 and 2005, pp. 27-85). Obviously, power holders can greatly influence the effectiveness of LCR, but even in the domain of PSD, there are several issues that depend on political decision-making—for instance, support for localized Islamic financing products in non-Islamic countries.

Regarding the refinement of the policy environment, this article has focused extensively on the interaction between informal institutions and policy implementation. This under-researched topic is extremely important because informal ways of organizing PSD and LCR often play crucial roles in development. Making PSD more inclusive and LCR more effective requires a thorough understanding of the ways to overcome disabling institutions and capitalize on enabling institutions. In the light of the evidence presented above, further research and policy work could focus on three interrelated topics. First, table 2 in this article could be used as a start for the refinement of handbooks, appraisal documents and manuals, increasing the analytical capacity of policymakers and donor agencies if they seek to diagnose socio-economic and politico-economic realities in lagging economies. Second, Evans's (2004) concept of deliberative development deserves more attention. As mentioned above, it is a promising concept in relatively decentralized countries. Based on the Porto Alegre and Kerala cases, one of his conclusions is that:

“Rather than making the ‘rational’ choice that their individual input will have little impact on the final outcome and therefore doesn’t warrant the cost of lost time, ordinary citizens appear to agree with [Amartya] Sen that the ability to make choices is an intrinsically valuable and rewarding mode of human functioning”.

Further research and policy work could be beneficial for implementing participatory and inclusive processes of local development. In ethnically divided localities, for instance, multi-ethnic citizen councils could be established that try to

solve ethnic conflicts and bring various ethnic communities closer together. Another opportunity offered by deliberative councils is the reduction of elite capture such as that described in box 1. Third, the phenomenon of migration out of highly impoverished localities remains a sensitive issue. Neo-classical regional economists view it as a suitable solution in order to reach conditions for equilibrium in domestic and international labour markets; but for densely populated areas, this is not likely to suffice. PSD and LCR policies should address the plight of those who are not able to migrate. If such policies lead to higher living standards, they could even result in reverse migration—out of huge congested and polluted cities.

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OPPORTUNITIES AND CONSTRAINTS OF ORGANIC AGRICULTURE IN CHIANG MAI PROVINCE, THAILAND

*Arpaphan Pattanapant and Ganesh P. Shivakoti**

The application of chemicals in conventional agriculture to increase productivity can result in environmental degradation, bring about economic problems and cause harmful effects on farmers, labourers and consumers. Responding to these problems, a number of non-governmental organizations and government agencies have been promoting organic agriculture in the province of Chiang Mai in order to assure food safety and at the same time alleviate the poverty of farmers. The present study discusses the organic agriculture movement in Chiang Mai and compares organic agriculture with conventional agriculture in terms of yields, socio-economic considerations and human health aspects. The findings show that organic agriculture could generate significant benefits. However, constraints inherent to organic farming practices and other factors, including off-farm works and perceptions of organic agriculture, complicate the process of organic certification and standards, and to some extent weaken extension efforts in promoting organic agriculture. In order to improve organic farming, there is a need for all stakeholders, namely, government agencies, non-governmental organizations, consumers and farmer organizations, to work together.

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I. INTRODUCTION

Food is crucial to human life. The rapid growth of populations, which in turn entails increased demand for food, has led to changes in agricultural systems. Traditional agricultural techniques were replaced by the monoculture approach that became mainstream agriculture. Modern agricultural systems have been widely practiced in many countries, including Thailand, with the aim of increasing competitiveness. In Thailand, such systems have been adopted for growing rice, sugarcane, cassava and other cash crops (Jitsanguan 2001; Manarungsan 2002). Although conventional agriculture has many large-scale positive effects, such as high yields in crops and increased food supply through the adoption of new technologies, the intensive use of chemicals and mechanization has led to the destruction of the soil and water resources, and has damaged the important supporting ecosystems. The consequences, therefore, of conventional systems are environmental degradation, economic problems and increased health risks (Jitsanguan 2001; Sharma 2006; Uphoff 2002; Sununtapongsak 2006; Tancho 2006).

Organic agriculture has emerged as an innovative, sustainable approach to solving the problems encountered in conventional agriculture (Jitsanguan 2001; Unno 2003). Organic agriculture is defined by its input supply and the agricultural practices used. It involves the use of natural, non-chemical materials that can be collected on farms and/or in households; in organic agriculture, efforts are made to avoid the use of chemical inputs. The advantages of organic agriculture can include increased productivity and enhanced biodiversity of the farmlands and surrounding areas. It increases the quality of the water, is safer for animals, and is beneficial to plants. And, of course, organic agriculture is generally more advantageous for the well-being of farmers and consumers than conventional agriculture is (Jitsanguan 2001; Liebhardt 2003; Sununtapongsak 2006). Thus, organic agriculture is economically viable, environmentally sound and socially acceptable (Jitsanguan 2001; Dabbert 2003; Liebhardt 2003; Wood and others 2005).

This paper aims to raise awareness of the benefits of organic agriculture as well as examine the impacts and limitations of organic agriculture for small farmers in the province of Chiang Mai, in northern Thailand. Most of the province is covered by forest and agricultural farms, found in the foothills of the mountains at its centre. Due to its favourable climate (an average temperature of 25.4°C and average relative humidity of 71 per cent), Chiang Mai is considered one of the country's major sources of agricultural products, and its agricultural area is the second largest in the northern region of the country. Many kinds of plants can be grown in the province, with rice, soybeans, tobacco, longan, lychee, oranges, garlic, onions, and shallots among its major agricultural crops; temperate-climate

vegetables and flowers are also grown. The agricultural products of the province are for domestic consumption as well as for export.

It has been noted that conventional agricultural practices have led to various problems, such as decreased prices of agricultural products, increased costs of inputs and low productivity, and the farmers who adopt such practices are often reported to be perpetually in debt. At the same time, health risks from the use of agrochemicals have also increased considerably among farmers practicing conventional agriculture. In 1997, the Bureau of Epidemiology at the Department of Disease Control under the Thai Ministry of Public Health reported that Chiang Mai was among the country's top 10 provinces with a high number of patients having health problems related to pesticide application (Sununtapongsak 2006). The Northern Regional Agricultural Extension Office (cited in Food Safety Chiang Mai 2007) reported that in 2002, pesticides were applied by most farmers in Chiang Mai (97 per cent); 77 per cent of the farmers used herbicides. A cholinesterase¹ level test conducted by the Chiang Mai Provincial Health Office in 2003 on blood samples taken from consumers showed chemical traces that were considered dangerous (Food Safety Chiang Mai 2007).

In Thailand, organic agriculture was initially introduced by non-governmental organizations (NGOs) in order to minimize the costs of agricultural inputs and increase the income of farmers. It was also aimed at reducing the health risks farmers and consumers faced when producing and consuming chemically contaminated food products. Now, organic agriculture, in general, is widely supported by NGOs, government agencies, farmers' groups, and consumers who are concerned about the effects of chemicals on human health. Although the promotion of organic agriculture in Chiang Mai has been bolstered by the NGOs and government agencies concerned, its adoption still remains at an initial stage. Thus, there is a need to examine the current situation of organic agricultural practices and ways of promoting and supporting organic farmers on a regular basis, and to further enhance the adoption of such agricultural practices. It is hoped that the findings of the present study will be useful in developing agricultural strategies and policies to successfully promote organic agriculture in Chiang Mai in particular, and in Thailand in general.

¹ Cholinesterase is an enzyme which breaks down acetylcholine, a neurotransmitter in the human nervous system. When cholinesterase is blocked by chemicals, such as organophosphate and carbamate in pesticides, acetylcholine will increase and affect the neurons (Pornpanuwit 2007; Sangkamol 2007).

II. METHODOLOGY

The data used in the present study were obtained from farmers in five districts of Chiang Mai, namely: Mae Taeng, Mae Rim, Doi Saket, Sankampaeng and Hang Dong, which have rice and vegetables as their main crops. Mae Taeng and Mae Rim are in the northern area, Doi Saket is in the northeast, Sankampaeng is located in the east, while Hang Dong is situated in the southern part of the province. The secondary data used in the study were sourced from the various agencies of the Ministry of Agriculture and Cooperatives and other relevant organizations. The study areas were selected after consultation with the Chiang Mai Land Development Station (under the Land Development Department) and local NGOs.

To be qualified as an organic operator, a farmer must have practiced only organic farming for at least three years. On the basis of such criteria and the results of the reconnaissance survey conducted in the study areas, it was noted that only a small number of farmers had adopted organic practices. It appeared that many farmers have rejected the adoption of an organic approach due to various concerns that include: (a) the labour-intensive approach; (b) possible losses in income associated with decreasing yield; (c) a potentially lower quality of products in terms of size and shape; (d) a prolonged growing period leading to delayed harvesting; and (e) crop failure.

Conducted from February 2007 to August 2007, the study employed both qualitative and quantitative methods to collect and analyse the data. In order to assess the characteristics of the organic households in Chiang Mai, 37 organic farmers were selected as respondents. In addition, 35 conventional farmers were involved in the study; they were also asked to compare organic farming with conventional farming in terms of their respective impacts on productivity and the economy. All 72 respondents were included in the questionnaire survey. Questionnaires were pre-tested and modified with an earlier pilot survey. Information, including household characteristics, farming practices, agricultural extension approaches, and perceptions of organic agriculture, were collected from all respondents during the questionnaire survey. However, the questionnaire for the organic farmers placed more focus on organic practices and marketing aspects.

In order to obtain additional data for the analysis, interviews were conducted with key informants comprising present and former organic group leaders and group committees (17 of the 37 sampled organic farmers were considered key informants), as well as with eight officers from organizations that supported the organic movement and its promotion in the province, including the Chiang Mai Land Development Station, the Institute for a Sustainable Agriculture Community

(ISAC), the Foundation for Education and Development of Rural Areas (FEDRA), the Earth Net Foundation, Suan Pakasit, the Northern Organic Standard Organization (NOSO), the Chiang Mai Organic Agricultural Cooperative and the Agricultural Development Cooperative. Information related to services available to the farmers and technical support received were also obtained from the key informants. The leaders of organic groups and committees who served as key informants were also included in the questionnaire survey.

After the interviews with the key informants and upon completion of the questionnaire survey, group discussions for the respondents involved in organic agriculture were held to acquire more information regarding their attitudes towards organic agriculture and the problems they encountered during the adoption of organic farming practices. Participatory observation techniques were adopted to investigate group activities, including trading and training.

III. RESULTS AND DISCUSSION

The organic agriculture movement in Chiang Mai Province

In the past, subsistence agriculture in Chiang Mai was part of a traditional system in which farmers produced commodities mainly for family consumption and exchanged the surplus with their neighbours (Chatchawan and Sairokham 2004). Following the implementation of the National Economic and Social Development Plan in 1961, there was a shift in policy towards an emphasis on the promotion of agricultural products for export. Infrastructure, such as irrigation and road networks, and agricultural technologies were developed and improved to support agricultural production. The expansion of infrastructure and the increasing demand for food crops, which provided economic incentives, led to the conversion of more land for cash crops such as, among others, rice, soybeans and tobacco. Thus, the focus had shifted to commercial production and agribusiness (Gypmantasiri 2002; Chatchawan and Sairokham 2004). In order to maximize yields, farmers started to use chemical fertilizers, insecticides and pesticides in large quantities. This led to increasing problems related to economics, health hazards, and environmental issues.

In the late 1980s, NGOs in the northern region of Thailand started promoting sustainable agricultural systems as alternatives to conventional agriculture in order to address the problems emanating from conventional agriculture practices. Such efforts were based on the results of studies conducted by many NGOs, which showed that successful sustainable agricultural systems could consist of integrated farming, natural farming, agro-forestry farming and organic agriculture (Unno 2003). In 1990, the Alternative Agriculture Network in northern Thailand organized seminars

on the promotion of sustainable agriculture, which also provided an avenue for discussing ways and means to mitigate the problems in the development of sustainable agriculture. As a result, alternative agriculture networks at the provincial level were established throughout the country to facilitate the exchange of information between farmers and consumers, and to promote the production of chemical-free vegetables in each province.

In a related study conducted in 1991 by the Institute for a Sustainable Agricultural Community, a local NGO, the organization concluded that organic agriculture was suitable for small farmers in Chiang Mai as an alternative to mainstream agricultural systems. Moreover, the study also confirmed that organic agriculture: (a) is appropriate to the small farmlands and limited on-farm resources; (b) draws on the wisdom and knowledge of local farmers; and (c) contributes to efforts to establish a self-sufficient economy. Although organic agriculture has been promoted and supported in Chiang Mai since 1993, to date only limited groups of farmers have made the switch.

A critical point in the promotion of organic agriculture was reached after the Alternative Agriculture Network movement convinced the Government of Thailand to include sustainable agriculture principles in the Eighth National Economic and Social Development Plan (1997-2001). Subsequently, the Ministry of Agriculture and Cooperatives of Thailand started focusing on research and extension of sustainable agriculture. In 1997, the Ministry also committed to provide funds to conduct the Pilot Project on Sustainable Agriculture Development for Small Farmers, which by 1999 was administered by local organizations in 34 provinces, including Chiang Mai. Currently, organic agriculture and various types of sustainable agriculture approaches are being promoted and practiced extensively in the province.

Along these lines, more and more government agencies in Chiang Mai have focused attention on organic agriculture, which was a major element of the country's National Agenda of January 2005. In this connection, one of the strategies of the provincial government of Chiang Mai was to promote safe agricultural practices, including organic agriculture, for sustainable economic development. Local government agencies put in practice the provincial plans and development projects related to organic agriculture.

Support organizations

NGOs have played an important role in the promotion of organic agriculture in Chiang Mai, particularly among small farmers who utilize local on-farm resources. NGOs have been instrumental in providing services and support in terms of establishing organic certification and standards as well as in creating sustained

markets for organic products. Government agencies have provided assistance through additional practical demonstrations on the adoption of organic agriculture. However, government agencies have focused more on agricultural technology transfer and providing inputs, and less on providing marketing support.

In Chiang Mai, both local and national NGOs, including ISAC, FEDRA and the Earth Net Foundation, have been promoting organic agriculture. The main activities of these NGOs include training sessions on the application of organic agriculture techniques. In order to encourage farmers to adopt organic farming, NGOs have also facilitated the development of certification programmes and standards as well as markets for organic products. In addition, the Royal Project Foundation and Suan Pakasit (an organic agriculture project under the Crown Property Bureau) have been a source of technical support, including the provision of cultivated land and farm inputs as well as certification and marketing of organic produce, specifically for hill tribe farmers.

As the main agency coordinating the development and application of bio-fertilizers, the Chiang Mai Land Development Station encouraged the establishment of an organic farmers' group in each village. Other government agencies, such as the Chiang Mai Provincial Cooperative Office, Chiang Mai Provincial Agricultural Extension Office, Chiang Mai Provincial Agriculture and Cooperatives Office, Chiang Mai Provincial Public Health Office, as well as the Chiang Mai and Mae Jo Universities, also conduct training courses and provide technical support services.

Organic certification

Three organic-certification bodies, namely, NOSO, the Organic Agriculture Certification Thailand (ACT) and the Organic Crop Institute, are registered in Thailand and operate in Chiang Mai Province. The first two are private organizations, while the third is a government agency under the Department of Agriculture. NOSO is a locally registered body and the products it certifies are sold mainly in Chiang Mai and other provinces in the northern region of the country. ACT and the Organic Crop Institute are nationally registered, and the organic products that are certified by these bodies are sold widely in domestic and foreign markets.

NOSO certified 55 small organic farmers in 2006; its membership of organic farmers increased to 67 in 2007. ACT certifies mainly farmers' groups and cooperatives. Currently, two cooperatives have been certified by ACT, namely, the Agricultural Development Cooperative in the Mae Rim district and the Mae Tha Sustainable Agriculture Cooperative in the Mae On district. The Organic Crop Institute certifies all organic producers, including individual farmers, farmers'

organizations, private companies, the royal projects, one agency under the Veterinary and Remount Department in Chiang Mai (which produces organic rice and sweet corn) and universities in Chiang Mai.

According to the information collected during the interviews of key informants, the annual fee for NOSO certification is 1,000 baht (B) (\$26.30),² of which B 700 (\$18.40) is shouldered by the Chiang Mai Organic Agricultural Cooperative (CMOAC), and B 300 (\$7.90) is paid by the individual farmer. While ACT certification is subsidized with funds from the Green Net, certification by the Organic Crop Institute is free of charge in line with a related Government policy.

In their responses to the field survey, many organic farmers expressed their apprehension that organic certification would only increase their production costs. Thus, organic certification could adversely affect the promotion of organic farming practices in the near future if support from the government or other organizations is not provided.

Organic production

Organic production systems in Chiang Mai are divided into two categories: (a) self-reliance organic agriculture; and (b) commercial organic agriculture.

The major motivations in the adoption of self-reliance organic agriculture were related to the aspects of food safety and health issues. The farmers, after having experienced health problems related to the use of chemicals, changed their agricultural practices. Moreover, since a large amount of organic produce is consumed in the farmers' households and the surplus is sold in local markets, the farmers wanted to ensure that their produce was safe for consumption. Furthermore, buyer confidence in the origins of organic food is increased when products are certified by NOSO as organic.

The desire to decrease production costs without applying chemicals was also an important factor for farmers who adopted commercial organic farming. Many such farmers have entered into agreements with private companies and/or NGOs, and manage their farmlands according to the national organic agriculture standards. The prices of organic produce are agreed upon by the farmers and the companies or NGOs before or during harvest. The companies or NGOs support the farmers in the areas of improved know-how, production techniques, farm inputs, certification and marketing. Generally, the organic products from commercial organic agriculture are sold both in domestic and international markets.

² Unless otherwise indicated, currency conversions in this paper are based on the average exchange rate of 2007: \$1=38 baht.

Although organic agriculture has been practiced in Chiang Mai for more than a decade, exact data and information on the number of organic farmers and production areas are not available. The data available from NOSO, ACT and the Organic Crop Institute, however, showed that in 2007, about 4,536 rai (about 725 hectares)—0.34 per cent of the total farmland in the province—were used for certified organic crops. During the pilot survey and interviews of the key informants, respondents confirmed that some farmers practiced organic agriculture (no chemicals used in any farming processes) but were not members of any organic farmers' groups and had not applied for organic certification. The perception is that such farmers consider membership in farmers' groups and the certification process difficult and a hindrance to their farming practices. Thus, information on those farmers, specifically regarding the area utilized for organic farming, could not be collected by the organic farmers' groups and relevant agencies, and was therefore not included in the present study.

Currently, the dominant organic products in the study areas are rice, both glutinous and non-glutinous, and vegetables. The glutinous rice varieties are RD-6 and Sanpatong 1, while the non-glutinous rice includes Khao Dawk Mali 105 (KDML 105 or jasmine rice), Hom Nin rice (black fragrant rice) and red rice. In the rain-fed areas of the upland farms in Mae Taeng and Mae Rim, organic rice is grown once during the rainy season, followed by crops such as soybeans, potatoes, maize and others in the dry season. Rice cultivation in the irrigated areas of the Doi Saket and San Kamphaeng districts yields two harvests per year.

Organic vegetables are grown primarily for household consumption to reduce the households' expenses. They are planted in small beds, with a mixture of varieties that are suitable to the local climate and soil conditions, with a mind to avoiding or minimizing pest problems. Many organic farmers plant vegetables in their home gardens, among fruit trees in an orchard, and on earthen dikes around the paddy fields. Primarily indigenous and Chinese vegetables that can grow throughout the year are planted.

Marketing

Market channels

Organic products are channelled through domestic and export markets. Domestic markets are mainly organic markets and health-conscious retailers. Non-certified organic products are generally sold at local markets, while certified organic products are sold with support from cooperatives and NGOs that have established distribution chains through health-conscious stores, supermarkets and international companies. Certified organic products are also sold at organic markets

organized by ISAC and the Foundation for Education and Development of Rural Areas in the city of Chiang Mai and its districts.

Prices

Prices have an important influence on the financial performance of organic agriculture. In the survey, 40 per cent of conventional farmers consulted stated that they expected to receive higher prices following conversion to organic agricultural practice. This is based on an understanding that the prices for certified organic products are generally higher than those of conventional products by approximately 20 to 25 per cent. The prices of organic paddy rice are determined by the supporting organizations; in the Mae Rim and Hang Dong districts, for example, the prices are set before the harvesting period by the Green Net Cooperative and its organic farmer members. Prior to reaching an agreement on the price of organic paddy rice, the price of conventional paddy rice and logistical management costs, which include sacks, transportation and labour, are considered. In establishing its prices, CMOAC considers the Green Net Cooperative price for paddy rice as the basic price, and adds B 1 (about \$0.03) per kilogram.

The farmers themselves also help determine the prices for certified organic vegetables after consultation with CMOAC during its bi-monthly meetings, taking into consideration the current market prices of conventional vegetables. For example, the prices of organically grown Chinese and seasonal vegetables are usually higher than those of conventional vegetables when sold in organic markets in the city of Chiang Mai and neighbouring districts. However, while the price of certified organic produce sold at local (conventional) markets is usually still a bit higher than conventional produce, the mark-up is less. The prices for some local organic vegetables can be in the same range as conventional vegetables that are collected from the wild or grown in the home gardens and backyards of most local people. Nevertheless, for the purpose of certification, all local, Chinese and seasonal vegetables are investigated and certified.

Impacts of organic agriculture on small farmers

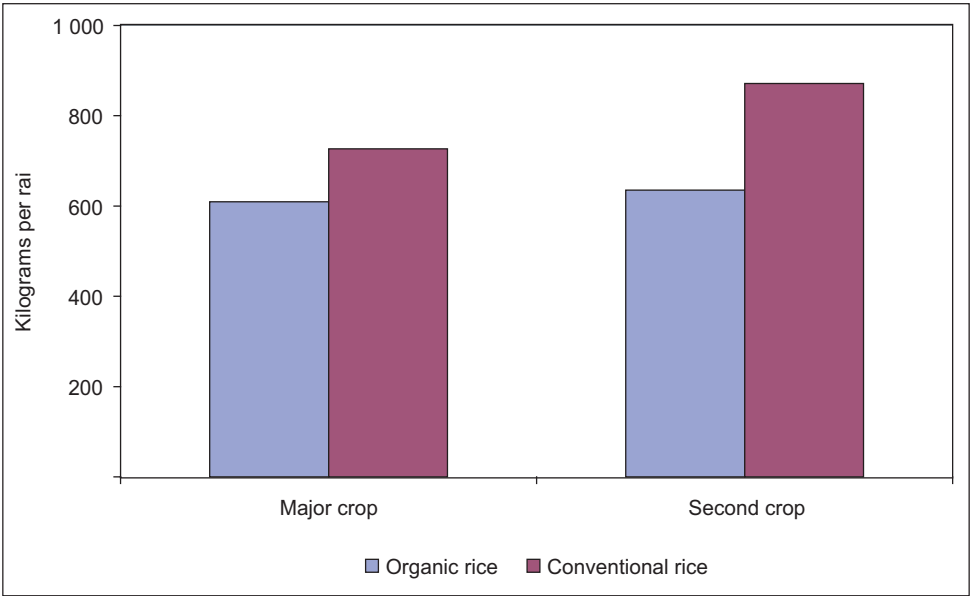
In the present study, the impacts of organic agriculture on small organic farmers are assessed with regard to the aspects of yields as well as economic, social and human concerns.

Yields

Figure 1 shows the difference in the yields of two crops (major and second) of organic and conventional rice in 2006. These findings were in line with previous

studies in terms of lower productivity in organic agriculture (Kim 2003; Nieberg and Offermann 2002; Carambas 2005; Murphy and others 2007). Compared with those from conventional agriculture, the yields from the organic system were approximately 16 per cent lower in the major crop and 27 per cent lower in the second crop. However, it should also be noted that the yields from organic agriculture could have been affected by the agricultural practices used on the land prior to conversion, which may have altered the soil fertility (Dabbert 1994; Halberg and others 2006; Parrott and others 2006). Nonetheless, some organic farmers indicated that they produced higher yields; this could be due to the fact that they had used traditional agricultural practices with low inputs before converting to organic agriculture. In fact, about 60 per cent of the organic farmers who responded to the survey reported that their yields had been the same as those who had been applying conventional agricultural systems. Although yields over the long term were not significantly different when organic practices were adopted, 85.7 per cent of the conventional farmers believed that yields would dramatically decline if they converted to organic agriculture.

Figure 1. Comparison of yields from organic and conventional rice farming Chiang Mai Province, 2006



Source: Field survey, 2007.

Note: 1 rai = 0.16 hectares.

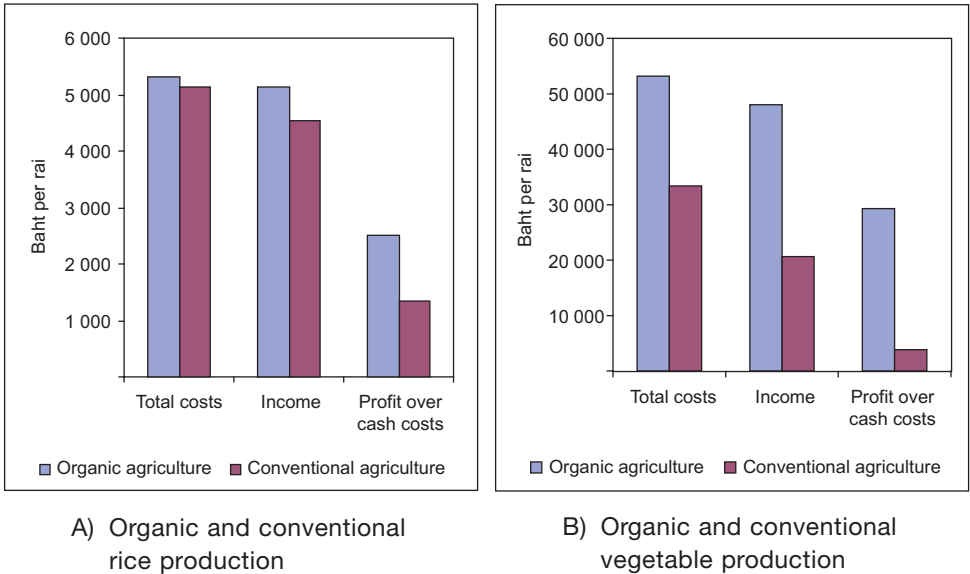
Economic impact

Costs and income

As shown in figure 2, the total production costs of organic agriculture per unit of farmland are higher than those in the conventional cultivation of rice and vegetables. This is similar to the findings from the studies of Sribang (2001); Kim (2003); and Carambas (2005). On the other hand, the data also indicated that organic agriculture earned higher income and profit over cash costs than conventional agriculture in both crops, as established in the studies of Hanson (2003); Pacini and others (2003); Setboonsarng and others (2005); and Carambas (2005).

“Costs” comprises both cash and non-cash costs, based on the results of the survey, cash costs were the ones that directly affected the farmers’ financial conditions. High cash costs could disrupt farm production activities and put many farmers in debt. Although the overall total costs for organic agriculture were

Figure 2. Comparison of total costs, income, and profit over cash cost



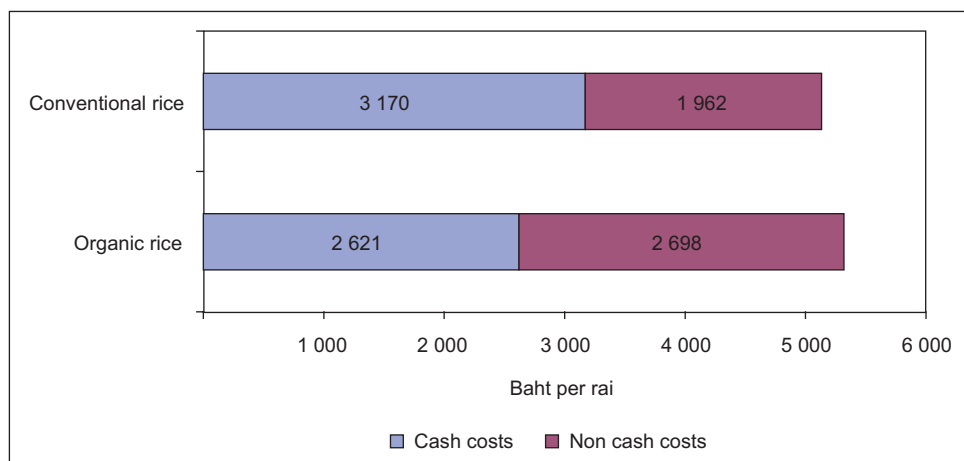
Source: Field survey, 2007. Prices used in the calculations were based on data provided by farmers.

Notes: \$1 = Baht 38, based on average exchange rate in 2007.

1 rai = 0.16 hectares.

higher, it is also clearly shown that conventional rice production initially entailed higher cash costs of about B 3,170 per rai, or three-fifth of the total expenditures (figure 3). In contrast, the cash cost involved in organic rice was B 2,621 per rai. It was noted from the survey that a major cash cost for rice production under both organic and conventional practice was the cost of labour. The second largest proportion of the cash cost for conventional rice was the cost of chemical fertilizers and pesticides (figure 5A). A reduction of the cash costs in organic rice production could be due to the replacement of external inputs with on-farm inputs, such as animal manure and crop wastes.

Figure 3. Comparison of cash and non-cash costs in rice production



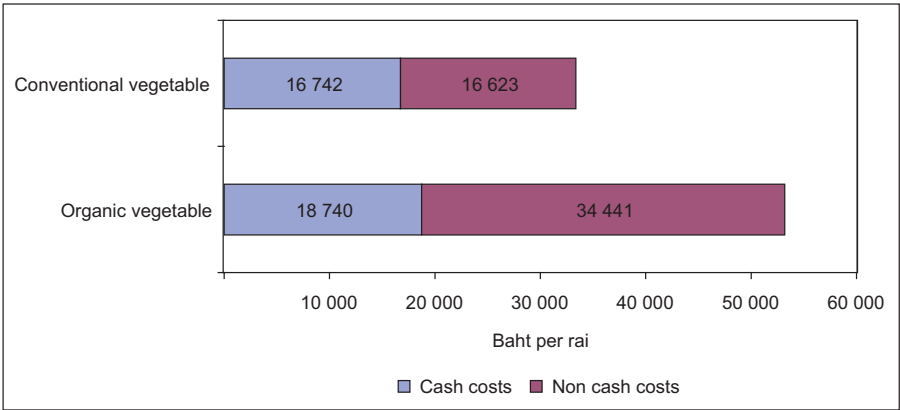
Source: Field survey, 2007. Prices used in the calculations were based on data provided by farmers.

Notes: \$1 = 38 baht, based on average exchange rate in 2007.

1 rai = 0.16 hectares.

However, as shown in figure 4, conventional vegetable farming incurred lower cash costs than organic vegetable farming, at B 16,742 and B 18,740 per rai, respectively. As illustrated in figure 5B, the highest proportion of cash costs for organic vegetable farming came from other costs, such as market space rental and transportation to organic markets for direct sales. Thus, it can be said that the extra costs could become major barriers for organic conversion. Although some studies have noted that certification costs for organic farmers are high (Wynen 2003), this was not the case in Chiang Mai, as such costs were being subsidized by support organizations. In the case of conventional vegetable farming, two thirds of the total cash costs went to labour and chemicals.

Figure 4. Cash costs and non-cash costs in vegetable production

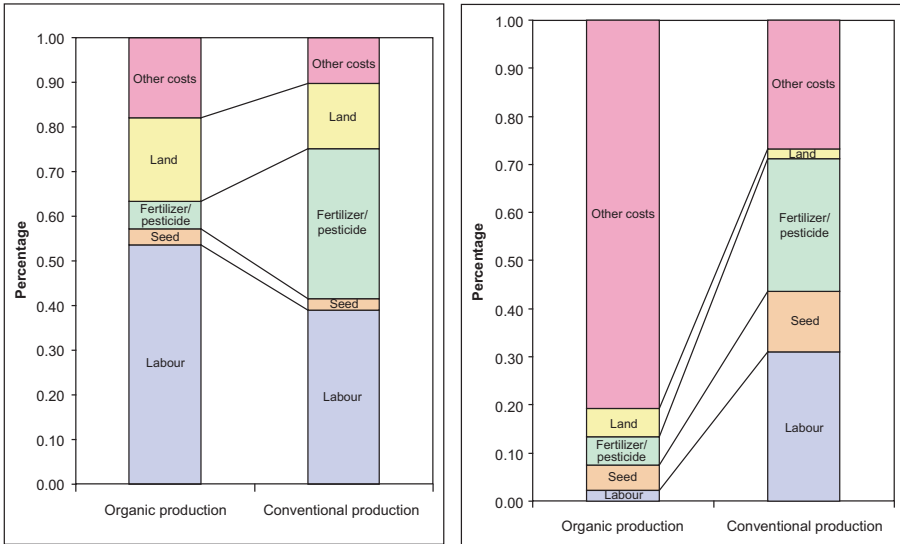


Source: Field survey, 2007. Prices used in the calculations were based on data provided by farmers.

Notes: \$1 = 38 baht, based on average exchange rate in 2007.

1 rai = 0.16 hectares.

Figure 5. Comparison of cash costs, organic and conventional agriculture



A. Cash costs in rice production

B. Cash costs in vegetable production

Source: Field survey, 2007

Note: "Other costs" includes depreciation, fees of certification, market place, transportation, water, and electricity.

In order to assess the economic viability of organic and conventional agriculture, benefit-cost ratios (total benefit per total cost of production) were calculated from the data provided by the farmers during the survey. In both types of agriculture, the benefit-cost analyses gave ratios of less than one (table 1). However, the benefit-cost ratios of organic rice and vegetables, which were nearly equal to one, were greater than that of conventional agriculture, specifically when a higher, or premium, price was offered for the organic produce (scenario 1). This implies that, under those circumstances, organic production would be more financially viable than conventional production. However, the benefit-cost ratios could decrease if premium prices for organic produce were not offered (scenario 2); in that case, particularly with regard to rice production, organic agriculture would be less practical than conventional agriculture (table 1).

Table 1. Benefit-cost analysis of organic and conventional agriculture

	<i>Benefit (Baht/rai)</i>	<i>Cost (Baht/rai)</i>	<i>Benefit-cost ratio</i>
Rice			
Scenario 1: Organic rice with price premium			
Organic rice	5 137	5 319	0.97
Conventional rice	4 527	5 132	0.88
Scenario 2: Organic rice without price premium			
Organic rice	3 191	5 319	0.60
Conventional rice	4 527	5 132	0.88
Vegetables			
Scenario 1: Organic vegetables with price premium			
Organic vegetables	48 048	53 181	0.90
Conventional vegetables	20 609	33 365	0.62
Scenario 2: Organic vegetable without price premium			
Organic vegetable	36 050	53 181	0.68
Conventional vegetable	20 609	33 365	0.62

Source: Author's calculation based on field survey data.

Notes: \$1 = 38 baht, based on average exchange rate in 2007.

1 rai = 0.16 hectares.

Family labour

Farmers' families have been the major source of labour in all agricultural systems, even with the increasing role of hired labour in farm practices. As organic agriculture is labour-intensive, family labour is used for farm activities as much as possible in order to minimize the need for hired labour. As shown in table 2, the total and average numbers of family members engaged in farm labour were higher in organic operations than in conventional practice. In addition, labourers in the organic farming system dedicate themselves full-time to their farms, while about one half of labourers in the conventional system work only part-time on their farms. Conventional farmers also usually work off the farm, such as in the wood carving industry and factories, to earn supplementary income after the planting and harvesting seasons. In organic agriculture, which requires full-time labour for farm activities such as planting, harvesting, and weed and pest management, labourers cannot afford to take an off-farm job. Moreover, other family members, often women, take care of selling the produce in organic markets one to three times a week. The employment opportunity for labour in the organic system is evenly distributed in on-farm and marketing activities throughout the year. Thus, family labourers on an organic farm would have no time to take off-farm jobs.

In order to evaluate the rate of profitability of farming practices with respect to family labour, an analysis of the rate of return to family labour was conducted. The rate of return to labour is defined as the portion of the net farm income paid to personal labour (Kay 1981). This rate should be at least as great as the opportunity cost on labour in non-farm jobs. In the present study, the rate of return to labour was compared with the standard minimum wage rate in the study areas. As indicated in table 2, organic farming received a higher rate of return to family labour compared with conventional practice, at about B 128 and B -43 per person-day, respectively. Furthermore, the rate of return to family labour on organic farms was higher than the minimum wage (B 120/day) in the Mae Taeng and Mae Rim districts. However, the return is slightly lower in the Hang Dong, Doi Saket and Sankumpaeng districts, where the minimum wage is nearly the same as the minimum wage in Chiang Mai City, which is approximately B 140 to B 160 per person-day. In contrast, the rate of return to family labour on conventional farms showed that the net farm income was not sufficient to pay for the family labour. The negative sign of the rate shown in table 2 implies that earnings from conventional agriculture cannot cover the capital investments of a farmer, including family labour and their own assets, and as a result farm production does not generate a profit. Thus, working full time on the conventional farms is not attractive for farmers, who consequently take off-farm jobs.

Table 2. Types of labour and return to labour in organic and conventional agriculture, Chiang Mai Province, 2006

Type of farm	Total family labour (persons)	Average family labour (persons per household)	Type of labour (Percentage of total labour)		Return to family labour (baht per person-day)
			Full-time	Part-time	
Organic	74	2.0	76	24	128
Conventional	60	1.7	52	48	- 43

Source: Author's calculation based on field survey data.

Note: \$1 = 38 baht, based on average exchange rate in 2007.

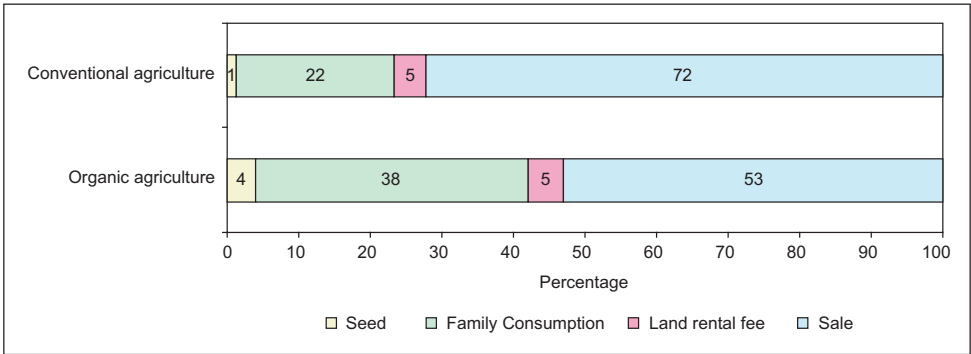
Food security

An important concern relating to organic farm productivity is food security, or a family's access to sufficient food. This concern is based on the general assumption that organic agriculture produces low yields, which could lead to inadequate food supply. Although yields from organic agriculture could be lower, this does not have a negative effect on food security (Halberg and others 2006), as organic farmers are able to allocate sufficient quantity of their products to fulfil their families' food demand. The organic farmers in the present study confirmed that about 38 per cent of their produce is kept for family consumption, while 53 per cent is sold. In comparison, the farmers who apply the conventional methods indicated that they could set aside only 22 per cent of their produce for family consumption, while 72 per cent is sold (figure 6). This may be because under the concept of organic production, family consumption, rather than commercial sales, is the priority.

Moreover, in organic agriculture, more diversified varieties of vegetables are planted (table 3) for household utilization and for distribution to relatives, with the surplus usually sold in organic markets. In the case of conventional vegetable farming, mono-cropping is practiced, or only a few varieties of vegetables are planted. Thus, some conventional farmers reported that they still have to buy other kinds of vegetables for family consumption.

Storing rice for future consumption and diversifying vegetables cultivated in farms would guarantee an adequate supply of food and reduce expenses in terms of family consumption. Furthermore, food security could also be linked to household income. As noted above, the household income of organic families could be increased through the implementation of a premium price for organic produce. The improved income could enhance purchasing power, to prevent farmers

Figure 6. Rice distribution in organic and conventional agriculture



Source: Field survey, 2007.

Table 3. Organic vegetables produced in the study area

Type	Variety
Indigenous	Eggplant, tomato, coriander, lemongrass, galanga, ginger, <i>Cytrus hystrix</i> , lime, kitchen mint, chilli pepper, bird pepper, Welsh onion, shallot, garlic, plate brush, sweet basil, hoary basil, sacred basil, water mimosa, star gooseberry, Indian spinach, ivy gourd, angled loofah, snake gourd, cha om (<i>Acacia pennata</i>), kood (a fern of the <i>Polypodiaceae</i> family), chengda and e-hin, among others
Chinese	Chinese kale, bok choy, lettuce, green lettuce, Chinese ipomoea, Chinese radish, Chinese chive, chayote, okra, yard-long bean, cowpea, green pea, cucumber, corn, celery
Temperate	Cauliflower, cabbage, broccoli, Brussels sprouts, carrots, pumpkin

Source: Field survey, 2007.

from encountering problems in terms of access to other commodities. Thus, food security is related not only to productivity, but also the financial conditions of the farmers’ families.

Social impact

Community participation

Based on the information collected during the field survey, conventional vegetable farmers are busy throughout the year, as their activities include watering the plants, spraying pesticides and hormones until crops are harvested and taking jobs in factories after their work in the fields has been completed. This leaves

such farmers with little time to participate in community activities. On the other hand, organic farmers work only in the villages and on farms, and their flexible schedules enable them to participate in community activities. According to the field survey, about 73 per cent of the farmers participated more in community activities following their conversion to organic agriculture: 27 per cent did not perceive any change in their participation following conversion. Participation in community activities could provide some benefits to farmers, specifically in terms of the exchange of labour, and the sharing of information and knowledge on production, marketing, and possible sources of funds (Bubolz 2001; Yai Muang 2004).

Relationships

In the present study, two kinds of relationships are being referred to: (a) within the family; and (b) between producers (farmers) and consumers. With respect to family relationships among those practicing the conventional system, while men work in cities after the planting season, women take over the farm activities, such as the application of pesticides and chemical fertilizers. In organic operations, spouses work only on the farmland, and due to the additional labour required, the children also take part in the farm activities during school breaks. Thus, in the case of organic farming, closer family relationships develop during work, which also instils agricultural loyalty in the children. In the end, the benefits outweigh the lost opportunity to earn additional income from off-farm jobs in the urban areas. According to the field survey, 65 per cent of the farmers spent more time with their families after converting to organic agriculture. However, about 3 per cent expressed that they were spending less time with their families because of the increased labour requirements in organic farm management.

Relationships between farmers and consumers also vary according to the type of agricultural system practiced. The role of organic farmers actually extends beyond the trading of products in organic markets, as such farmers also establish a certain relationship with consumers that goes beyond buyer-and-seller roles. Such a relationship could be rooted in the face-to-face interaction between organic farmers and consumers, which could be different in the conventional food supply chains. Farmers and consumers in organic markets usually exchange knowledge and information on organic supply and demand as well as on the benefits and limitations of organic production (Sage 2003). This provides better mutual understanding; organic farmers are also able to create networks and consumers are able to gain greater awareness of the health risks related to chemical residues in foods as well as of the quality and value of organic products. This kind of relationship has also played a crucial role in strengthening the promotion of organic

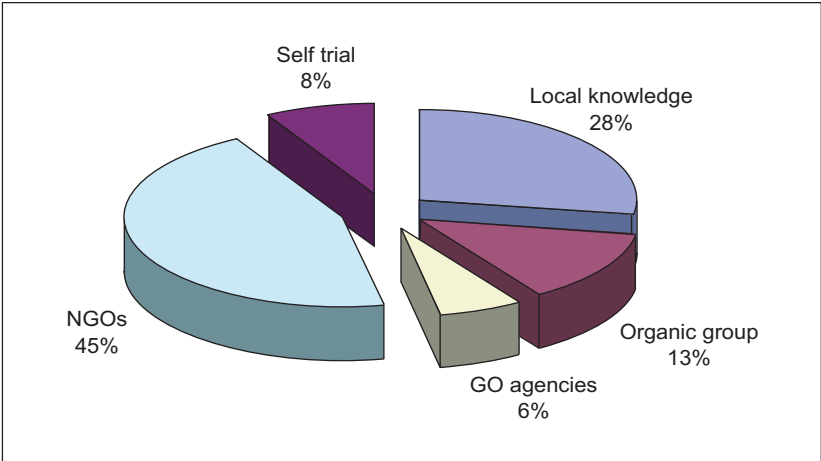
agriculture in Chiang Mai, considering that external factors, such as consumer demand, influence the development of agricultural systems (Dixon and others 2001). It is not surprising then, that many studies report that the growth of organic agriculture is affected by consumer demand (Tate 1994; Saunders and others 1997; Panyakul and Sukjirattikarn 2003; Sittiwong and Varinrak 2004).

Human impact

Knowledge development

Knowledge is one of the key factors affecting the development of organic agriculture. Based on the field survey, organic farmers in Chiang Mai obtained knowledge on organic agriculture techniques and skills through various sources, primarily from NGOs (figure 7). Certain developments, however, have been adopted by organic farmers through a process of combining local knowledge and modern technologies, in order to respond to the requirements of agricultural production and environmental conditions. In examples of practices based on local knowledge, citronella and African marigold are grown in the vegetable beds, and eggshells are placed on a wood branch and pitched on the beds; the strong odours limit possible insect infestations. Another local practice includes placing papaya leaves in the water of paddy fields to eliminate golden apple snails (the snails stay on the leaf to feed, and thus can be easily collected). Farmers also use botanical pesticides, such as neem and wood vinegar, which are sprayed when insect outbreaks occur.

Figure 7. Sources of organic knowledge and information



Source: Field survey, 2007.

Training and study-visit programmes are major extension methods. As one of the requirements for membership in an organic group, farmers must attend training programmes arranged by support organizations on the concepts and techniques of organic agriculture as well as on gender roles, and must also participate in farm visits. Approximately 81 per cent of the organic farmers consulted had attended more than 10 training programmes, while about 14 per cent had joined three to five training courses within the last three years. The participation of farmers in training sessions and attendance at the Farmer Field School programme offered in the study area are forms of knowledge development. Knowledge of organic farming, obtained through observations, analysis of the field situation and problems, and the exchange of experiences, was a factor that convinced farmers to go into organic farming. The farmers then adapted this knowledge to their farmland; a process that enhances not only self-reliance, but also the production of organic commodities.

Health

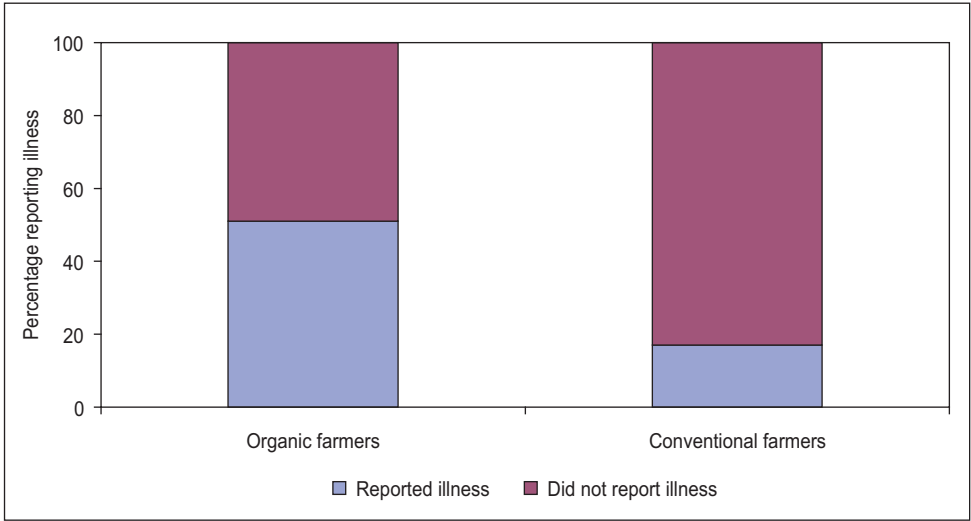
The ill effects on one's health due to chemical applications, as experienced by the farmers and their families, is one of the reasons given by farmers for their conversion to organic practices (Hutranuwatr and Hutranuwatr 2004; Carambas 2005). As illustrated in figure 8, about 51 per cent of the farmers who had converted to organic agriculture had experienced sickness prior to conversion. Some organic farmers who had experienced sickness prior to conversion—and even some who had not—stated that their health condition had improved following their conversion. However, a few farmers reported no change in their health; those farmers tended to be ones who had been practicing traditional or low-input agriculture or working in off-farm jobs before converting to organic agriculture.

Of the conventional farmers who did not switch to organic farming, only 17 per cent reported having experienced illness. However, most conventional farmers who did not experience sickness reported that they hired labourers to spray pesticides and hormones on their farms in order to avoid the effects of the chemical substances. As shown in table 4, most conventional farmers believed that chemical inputs had negative impacts on health, and that adopting organic agriculture practices could help reduce such problems.

Constraints on organic agriculture in Chiang Mai Province

As reported by Rigby and Cáceres (2001), Wynen (2003), Sittiwong and Varinrak (2004), Singpornpong (2005), Pornpratansombat (2006), Kerselaers and others (2007) and Wheeler (2008), the progress in organic agriculture development has been slow, due to many barriers, which include: (a) lack of information and

Figure 8. Occurrence of illness emanating from use of chemical substances



Source: Field survey, 2007.

Note: Illness reported by organic farmers refers to sickness experienced prior to switching to organic agriculture.

Table 4. Perception of the negative effects of chemical application on health

Believe that application of chemicals can have a negative effect on health	Organic farmers		Conventional farmers	
	<i>n</i>	Percentage	<i>n</i>	Percentage
Yes	36	97.3	25	71.4
No	1	2.7	10	28.6
Total	37	100.0	35	100.0

Source: Field survey, 2007.

support from extension agencies; (b) negative perception of organic agriculture; (c) improper management of weeds and pests; (d) decreases in yields; (e) lack of organic inputs; (f) insufficient labour supply; (g) insufficient research and development; (h) weak infrastructure; (i) complications in organic standards; (j) lack of awareness of existing standards and certification; (k) ineffective organic markets; (l) inadequate information on organic products on the part of the consumers; and

(m) pricing problems. In the case of organic agriculture development in the province of Chiang Mai, the constraints can be classified into four major areas: the characteristics of farmers, organic production processes, organic certification, and extension services for the promotion of organic agriculture.

According to the survey, organic farmers perceived that conventional farmers preferred uncomplicated agricultural practices that required shorter time in production and that had a quick turnover. Organic farmers also noted that, in their view of conventional agriculture, farmers do not spend much time in the field, as their work consists mainly of spraying herbicides and pesticides in the paddy fields once the rice seedlings have been transplanted, after which they take up work in factories or perform other off-farm jobs. The farmers also believed that in vegetable planting, more pesticides and hormones are required to control insects, accelerate growth and enhance harvests. Thus, the conventional farmers believed that yields would be reduced following conversion to organic agriculture, and that organic products would be of lower quality in terms of size, shape and colour. In their opinion, therefore, organic agriculture could not provide satisfactory economic returns.

With regard to organic production processes, the organic farmers noted that many problems could occur, such as growth of weeds, especially in the rainy season. Thus, they spent more labour and time on weed management, resulting in higher labour costs. In addition they were faced with other problems, such as plant diseases and insect infestations. They also stated that off-season vegetables could not be grown due to the unfavourable environmental conditions. Such concerns had contributed to the limited production of organic vegetables, which could not meet the market demand. Moreover, the farmers also noted that organic vegetables had longer reproductive stages which could prolong the production period and delay harvesting.

Furthermore, the farmers also indicated that organic certification would be a major constraint on the development of organic agriculture. Since most farms in the province of Chiang Mai are small (on average 8 rai or 1.28 hectares, per household), farmers have developed the practice of constructing narrow dikes to increase the planting area. However, in accordance with organic standards, the dikes must be at least one metre wide to create a buffer zone between organic and conventional farms. This not only implies smaller planting areas, but also runs counter to the local agricultural culture and practices. Another concern related to organic certification is the high processing cost. At present, support organizations have been providing subsidies for certification, but many organic farmers do not rely heavily on such organizations for fear that they might withdraw the subsidy or

cancel payment of the certification fee. The farmers foresaw that, in such cases, they would have to bear the full burden of certification costs.

Another concern regarding organic agriculture development in the province of Chiang Mai is the agriculture extension services of government agencies. For some time, organic agriculture has been strongly promoted and supported by NGOs. A few years ago, government agencies joined the promotion, bringing with them extension activities that focused on organic fertilizers. However, farmers observed that many extension officers still believed in the positive impacts of conventional agriculture, and that such officers continued to promote the application of chemicals to reduce production risks. Moreover, some extension workers complained of the insufficient budget for the extension activities, which aggravated the situation and exacerbated the problems related to the lack of a monitoring and evaluation system.

The impacts and limitations, opportunities and constraints of organic agriculture in the province of Chiang Mai are summarized in table 5.

Table 5. Analysis of the strengths, weaknesses, opportunities and constraints of organic agriculture in Chiang Mai Province

<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none">• Based and built on local knowledge• Similar to traditional or low-input practices• Makes use of on-farm and local resources• Dependent on family labour, incurring low labour cost• Reduces health risk from harmful pesticide application and chemical substance contamination in agriculture commodities• Reduces debt since expenditure on inputs is lower• Reduces the consumption expenditure of families• Promotes food security and provides additional income from sale of surplus products	<ul style="list-style-type: none">• Insufficient labour inputs, especially with regard to weed management• Off-season vegetables cannot be grown• Longer production cycle and slow production turnover• Organic products are not as attractive as conventional products• Perception that organic production leads to decline in yield, and that it is not beneficial for land owners or farmers who are in debt• High cost of and complicated certification process• Lack of demand in community and local markets due to high prices• Insufficient support from government extension services, which also often promote conventional and good agricultural practices, as well as the use of some chemicals in agriculture production

<ul style="list-style-type: none">• Provides consistent income throughout the year• Provides opportunities for farmers to develop their knowledge and skills on farm production techniques• Commands high prices when products are certified
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Opportunities	Constraints
<ul style="list-style-type: none">• Enhances self-reliance among local farmers• Facilitates sustainable use of environmental resources• Government promotes organic agriculture as part of the national agenda• Non-governmental organizations have been promoting organic agriculture as a opportunity for poverty alleviation• Strong relationships among farmers and strengthened networks among farmers and consumers	<ul style="list-style-type: none">• Many conventional farmers view organic agriculture as an absurd technique• Conventional farmers still believe that monoculture or mainstream agriculture leads to high income• Conventional farmers believe that conventional products are of higher quality than organic products• Labour shortage in the agricultural sector• Lack of support from local organizations• Lack of coordination between governmental organizations and non-governmental organizations• Governmental organizations have a limited budget for regular training courses and relevant activities• Lack of proper monitoring and evaluation system on the part of the government's extension services

Source: Group discussion and key informant interviews, 2007.

VI. CONCLUSION AND IMPLICATIONS

Conventional agriculture has been promoted in Thailand to support economic development based on the market system, providing good quality crops at low prices and increasing the food supply. However, conventional agriculture has also contributed significantly to environmental degradation, bringing about economic problems and health risks to both farmers and consumers. Thus, organic

agriculture has been promoted as a sustainable way of reducing the application of chemicals and as a means of addressing the aforementioned problems.

In Thailand, the province of Chiang Mai has the highest rate of economic and health problems related to conventional agriculture practices. A number of NGOs have been making efforts to promote organic agriculture in the province for more than a decade as a means of addressing such problems, alleviating poverty and encouraging self-reliance on the part of the farmers. In recent years, government agencies have also turned their attention to promoting organic systems, as evidenced by the inclusion of organic agriculture in the national agenda.

The Ninth and Tenth National Economic and Social Development Plans (2002-2006 and 2007-2011) supported the concept of agricultural economy to attain self-sufficiency. Under the Plans, measures to enhance the ability of farmers to compete as well as to provide improved support for efficiency and sustainable production processes were considered necessary in order to produce safe and high-quality commodities while meeting acceptable standards at competitive prices. In addition, having as a fundamental pillar the sufficiency economy philosophy developed by His Majesty King Bhumibol Adulyadej, the Plans also promoted the implementation of sustainable agricultural systems. Under this concept, sufficiency is based on three significant aspects, namely: moderation, reasonableness, and the need for sufficient protection from impacts arising from internal and external changes (Sufficiency Economy Working Group 2003). The sufficiency economy philosophy encourages people to: (a) know what is enough for them; (b) learn to be satisfied with what they can have; and (c) try to be more self-reliant and self-sufficient without being extravagant.

Under sufficiency economy frameworks, organic agriculture was considered to be an approach that could facilitate self-reliance among small farmers, given that it could reduce the risks associated with the usage of external resources. In organic agriculture, the use of on-farm resources is emphasized, most agricultural products are consumed in the farmers' households, and the surplus can be sold in local markets at prices higher than conventional produce.

In areas covered by the study, organic agriculture provides farmers with incomes throughout the year from the production of vegetables, rice, soybeans and fruit, increasing the reliability of the farmers' household incomes. In addition, since organic agriculture is a holistic system, farmers learn more about the ecosystems in their fields and sustainable farm management. Organic agriculture also requires networking among farmers and consumers, and group work and discussion to exchange knowledge, experience, technology and information on aspects related to the adoption of organic agriculture practices. Consequently, the

know-how of farmers is enhanced, social relationships are established, and sustainable agricultural practices that are less harmful to the environment are adopted, thereby facilitating the balance and sustainable growth of an economy that supports the principles of the sufficiency economy philosophy.

Organic agriculture has the potential to help small farmers achieve sustainable development. However, most conventional farmers are still resistant to switching to organic farming, as they have negative perceptions of organic systems, which include fears of low yield and quality, high production costs and delayed income. Farmers who are land tenants and in debt believed that their families' fundamental needs could not be met through the practice of organic agriculture. In order to counter such views, the government should implement policies that would intensify the promotion of organic agriculture among farmers.

One difficulty noted in the promotion and development of organic agriculture in Chiang Mai is the lack of information. Although there may be some information on organic agriculture in the province, such information seemed to be scattered. Thus, sources providing lists of organic farmers' groups or producers, information on areas planted with organic commodities and technology, marketing advice, and knowledge should be compiled and updated regularly. There is also a need for cooperation and collaboration between the Ministry of Agriculture and Cooperatives and Ministry of Commerce as the main agencies in charge of this mission and directly involved in the production and marketing of the organic products. Available, up-to-date information is useful for development planning, training courses, marketing analysis and the enhancement of support services.

A policy should be developed that would take into consideration different types of organic farming, such as self-reliance and commercial organic farming. In self-reliance farming, food safety and the reduction of household expenditures should be highlighted. In addition to the existing indigenous knowledge, the dissemination of new agricultural innovations and technologies should also be priorities, as farmers require such innovation in order to produce higher yields. Farm and household accounts should also be established, as they are necessary financial management tools. As in other government projects, keeping track of such accounts has been promoted among farmers but not often monitored or evaluated. Thus, more follow-up actions on the management of such accounts and related farm activities should be carried out by the government agencies concerned.

For trade-oriented or commercial organic farming, a price policy should be established, as this is necessary to guarantee that the price of organic produce is higher than the price of conventional products. Based on the findings from the survey, organic farmers earned higher incomes due to the high prices obtained for

organic products. The prospect of higher prices for organic commodities could therefore be an attractive reason for conventional farmers to convert to an organic system. As organic farming is largely affected by natural conditions, crop insurance should also be made available and promoted, and the government or supportive organizations should consider providing a partial subsidy for crop insurance premiums in order to mitigate the risk and at the same time assure farmers of a stable income from organic farming.

With regard to the marketing of organic commodities, the government, relevant agencies, and organic farmers' groups should provide more market channels by cooperating with the private sector, such as shops and supermarkets, to designate space for organic products or to establish direct organic markets. Moreover, promotional campaigns should be intensified to raise consumer awareness of the harmful effects of chemical residue in farm produce and the positive effects of organic products. Such actions will encourage more consumers to purchase organic products, leading to increased demand and a greater likelihood that they will accept the higher prices charged for organic products.

The most important factor in organic development is awareness of organic agriculture. As stated above, conventional farmers still have negative perceptions of organic agriculture. Hence, an education policy should be established which incorporates environmental and agricultural issues in the curriculum at all educational levels, and awareness of organic agriculture should be raised by outlining the hazards of conventional agriculture as well as the philosophy and benefits of organic agriculture. Moreover, a policy should also be developed to promote the practical experience of organic agriculture in schools, in order to enhance awareness and the perception of the younger generation regarding organic farming. Involvement of the younger generation in organic gardening at school could lead to the spread of organic knowledge from children to their parents and family members, and on to the community. At the university level, a curriculum for degrees in organic agriculture should be developed to support research and development in organic innovation and technology.

In addition to the formal education system, organic training programmes are also necessary to the adoption of the organic system by farmers. Participatory training courses, organic farm visits, and on-farm trials should be provided by government agencies and NGOs to enhance the awareness of farmers and encourage them to adopt organic farming. Farm planning and management should also be included in the training courses for commercial organic farmers, particularly to equip them with the skills and know-how to produce appropriate seasonal vegetables and meet market demands. Follow-up and evaluation programmes

should also be promoted, as these could help farmers solve the problems they encounter and motivate them to continue practicing organic agriculture.

Furthermore, organic certification should be split into two levels: local and national. Local certification, with lower costs, should be developed as a requirement for self-reliance farmers wishing to sell their organic products in local organic markets. Such certification could increase the confidence of local consumers in the organic products. Certification at the national level should also be established as a requirement for products from commercial organic farming that are sold in domestic markets as well as those that are exported. This would make organic products more competitive.

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