Annex

METHODOLOGY

■ Bangladesh

Quantitative and qualitative methods were employed in generating this case study. The work was carried out in two streams which informed each other: first, an extensive review of secondary data was conducted in conjunction with a review of the grey and published literature; second, in-depth interviews and focus group discussions were conducted, some at subdistrict level.
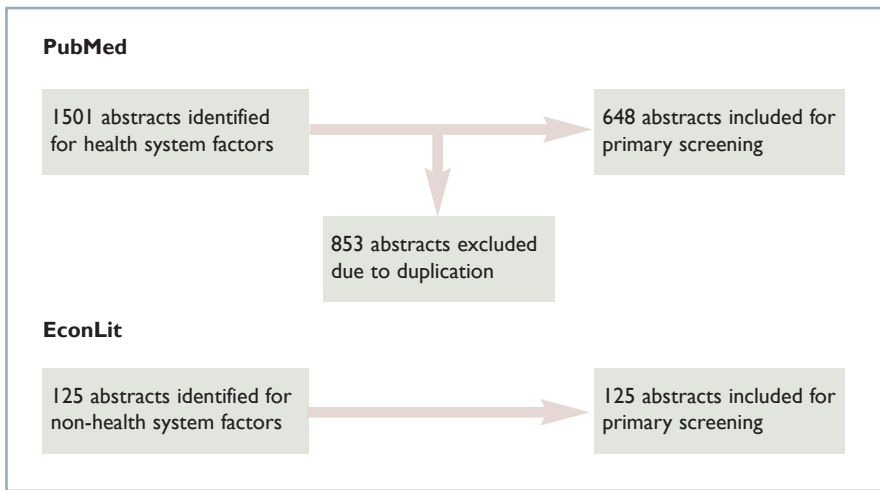
Quantitative methods

Data sources

In Stage 1, an extensive review of secondary grey and published literature was conducted (from national surveys and routine data) in order to track changes in selected health outcomes and health system related factors influencing these outcomes. These were supplemented using international data sources and an extensive literature review using the search methodology described below. A data inventory was created that summarized findings and described the local sources (Table A.1).

Table A.1 Key local data sources, Bangladesh (examples)

Sources	Time periods
Bangladesh Demographic and Health Survey (BDHS)	1993–1994, 1996–1999, 1999–2000, 2004, 2007
Urban Health Survey	2006
Bangladesh Maternal Health Services and Maternal Mortality Survey	2001
Bangladesh Adult Literacy Assessment Survey	2008
National Health Accounts	1996–2002
Bangladesh Health Watch Report	2007–2009
Social sector performance surveys: health and family planning	2004–2005
Human Resources Development Data Sheets,	2002–2010
Sample Vital Registration System, Bangladesh Bureau of Statistics	
First – Fifth Five Year Plans in Health and Population Sector,	
Annual programme reviews of HPSP and HNPSP	
The Constitution of Bangladesh	
Draft National Health Policy, Health Services Report	

Figure A.1   Search results for PubMed and EconLit, Bangladesh

Qualitative methods

Literature review

Literature searches were conducted focusing on both health and non-health factors affecting health (Figure A.1). PubMed was searched for health- and health systems-related factors. Eighteen different searches were implemented in three major outcome areas. Specifically, a country-specific core was used and then intermediary outcomes or final outcomes were searched within the six health systems building blocks, for example Bangladesh *and* immunization *and* service delivery. For non-health systems-related factors, a search was conducted in EconLit. The review also involved manual reference tracing. Ultimately, a total of 773 titles and/or abstracts were identified for inclusion. Further, a comprehensive review of the grey literature was undertaken, including books on the development of the nation that have been published in Bangladesh.

Key informant interviews and focus group discussions

The conceptual model underlying the study (see Chapter 2, Figure 2.3) was used to draw on the Stage 1 findings, including the health system and the wider policy context in which it operates. The model on health systems adopted by the WHO[1] was employed to explore the key changes over time relating to the six building blocks of the health system.

Based on past or present engagement in our areas of interest, 18 key informants were selected for interview: policy-makers, programme managers at both national

and *upazila* (subdistrict) level and public sector programme specialists (12); politicians and activists from NGOs and the private sector (2); international and development partners (2); academics (1); researchers (1). A pre-tested, open-ended questionnaire adapted for the Bangladesh context was used in the interviews. All interview participants gave written informed consent prior to participating in the interview.

In addition, 20 focus group discussions were conducted with government field workers (health assistants, family welfare assistants/skilled birth attendants, family welfare visitors), private providers (traditional birth attendants and informal providers) and NGO-sponsored community health workers (urban birth attendants, health workers/paramedics, health volunteers and health educators/counsellors) in selected rural and urban areas (including ICDDR,B's rural health system observatories in Abhoynagar and Mirsarai subdistricts and Dhaka city slums having BRAC's maternal, neonatal and child health programme). The gender breakdown of the focus groups was 79 men and 60 women.

Transcripts of the key informant interviews and focus group discussions were developed in Bangla and summarized in English. Reviews of local research/evaluation findings and/or policy briefs on relevant non-health sectors such as education, employment, food security, climate change, water–sanitation, social safety nets, poverty reduction, disaster management were undertaken to supplement the health-sector information. Finally, triangulation of evidence from multiple sources was conducted.

Data analysis

Findings were integrated in order to explain the improved health outcomes observed in Bangladesh with reference to the conceptual model and timeframe. Thematic analysis of qualitative information was employed to identify themes, subthemes relating to the framework, as well as emergent issues, with a particular emphasis on context. Efforts were made to validate qualitative information through triangulation of information derived from multiple sources.

Finally, an iterative feedback process was ongoing with our key informants and other stakeholders within Bangladesh, enabling the inclusion in the chapter of up-to-date material as it was released. Preliminary findings were presented at conferences and enriched by additional insights.

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■ **Ethiopia**

Both quantitative and qualitative data were reviewed and analyzed from government, nongovernment and private published documents and key informant interviews. The following represents the main data sources for the study.

Quantitative methods

Data sources

A review and time-series analysis of available documents was undertaken, covering the critical period between 1974 (the time when a communist military junta took power) and 2010. The analysis used secondary data and materials mostly on health indicators that focused on child and maternal mortality. Additional data on human, commodity and financial resources were also included. Table A.2 shows the sources, time period and indicators used in the study.

Qualitative methods

Literature review

This included review and analysis of health policies, reforms and innovations as well as health research conducted in the country between 1994 (when the Imperial era ended with a military coup) and 2010. The main ones are shown in Table A.3.

Key informant interviews

Eighteen interviews were conducted with key informants, involving health policy-makers, implementers and health driving forces and stakeholders. Specifically representatives were interviewed from Ethiopian Health and Nutrition Research Institute (EHNRI); Tulane University, Ethiopia; the Federal Ministry of Health, CCM-GF Secretariat, Ethiopia; National HAPCO; Health Bureau, Affar Region; Columbia University, Ethiopia; MSH; USAID; UNICEF; Health Bureau, Amhara Region Referral Hospital, Amhara Region; and World Bank, Ethiopia.

Data analysis

In general, as indicated above, data collection involved in-depth interviews with policy-makers, document review on health and related policy issues, and secondary data collection mostly on appropriate health and household indicators/outcomes. As far as possible, the data collection covered the following three

Table A.2   Key data sources, Ethiopia (examples)

Type of database	Time periods	Variables of interest
Household surveys (Ethiopia Demographic and Health Survey, 2000 and 2005)		
Central Statistical Agency	2000, 2005	Change in under-5 mortality by region, Ethiopia
Administrative reports (Federal Ministry of Health, 2009)		
Health and Health Indicators, Ethiopia	2004, 2008	Selected indicators in maternal, child health
	2007, 2008	Per capita expenditure for health by region
	2002/03–2007/08	Access to safe water
	2002/03–2007/08	Human resources – ratio of physicians to population,
International databases (data for selected East African countries)		
World Development Indicators, World Bank	1990–2008	GDP per capita (constant 2000 US$)
	1990–2008	Under-5 mortality
	2006–2009	% children aged <5 sleeping under insecticide-treated nets
	2004–2007	Physicians per million population
	2003–2007	Per capita expenditure on health (current US$)
	2003–2007	Share of out-of-pocket health expenditure
	2003–2007	Share of health expenditure from external sources
WHOSIS, 2009	2001–2007	Median availability of generic essential medicines

timeframes, in chronological order: (i) 1974–1991: to provide general *historical context* and the constraints that may have prevailed at the time including major socioeconomic, policy, political, natural and man-made events; (ii) 1992–2000: the *time of transition*, including major health and political policy formations; implementations and possible outcomes; along with infrastructural developments; and (iii) 2001– present: the *time of policy innovation and implementation*, (including donor involvement) and specific health and related outcomes.

Table A.3   Health policies, reforms, innovations and research, 1994–2010

Source/year	Document
TGE, 1993	The Health Policy of the Transitional Government of Ethiopia. Addis Ababa, Ethiopia
FMOH, 2009	Annual Performance Report of HSDP III (2008/9). Addis Ababa, Ethiopia
FMOH, 1998	The HIV/AIDS Policy of the Federal Democratic Government of Ethiopia. Addis Ababa, Ethiopia
FMOH, 2009	Results of Baseline Survey on Alignment and Harmonization for IHP Compact. Addis Ababa, Ethiopia
FMOH, 2008	Appraisal of MDG Performance Fund: The Programming Component. Addis Ababa, Ethiopia
FMOH, 2008	Scaling up aid for better health in Ethiopia, the IHP Road Map. Addis Ababa, Ethiopia
FMOH, 2010	4th National Health Accounts 2007/8. Addis Ababa, Ethiopia
MOFED, 2006	Ethiopia: Building on Progress A plan for Accelerated and Sustained Development to End Poverty (PASDEP), 2006/6–2009/10
MOFED, 2008	Joint financial arrangement between the Federal Democratic Republic of Ethiopia and development partners on support to the MDG-Fund. Addis Ababa, Ethiopia
WHO, 2009	Health-related millennium development goals. World Health Statistics 2006 and 2009 (WHOSIS). ITS Statistical Information system. Geneva
WHOSIS, 2006; 2009	Health-related millennium development goals
Miz-Hasab Research Centre, 2010	The System Wide Effects of the Scale Up of HIV/AIDs, Tuberculosis, and Malaria Services in Ethiopia
Miz-Hasab Research Centre, 2006	Hospital-based ART [antiretrovral therapy] scale-up in Ethiopia

In-depth interview transcripts and notes were coded by salient themes using NUD*IST as necessary. Secondary data were analysed by looking at trends (when possible, for instance with DHS and MOH indicators); and by overview when data were not consistently available. Health system elements were correlated with health outcomes. Health outcomes data were analysed in relation to policy, political and health systems – demonstrating how favourable political, policy and health systems yielded better health outcomes with lower investment in health.

■ Kyrgyzstan

Quantitative methods

Data sources

Information was drawn from secondary sources that are regularly used for the monitoring and evaluation of health systems in Kyrgyzstan. A data inventory was created, providing a detailed snapshot of data available on each indicator, data reliability and variations in data by source (Table A.4).

Data analysis

The primary approach was time-series analysis, tracking the progress in health systems inputs, outputs and outcomes during the period 1997–2009.

Qualitative methods

Literature review

Reviews were done of relevant local (both published and unpublished) and international literature on determinants of health improvement, wider economic and social changes that might have improved health, the historical evolution of the Kyrgyz health system, achievements and challenges, and evidence on how policy-makers had managed to promote the health reforms and improve health system outcomes. Other sources of documentary evidence included relevant local reports and regulations.

Key informant interviews and focus group discussions

In-depth interviews and focus groups were carried out at the national and regional levels. The in-depth interviews were administered to the policy-makers at the different levels and not limited to only the health sector. Focus groups with doctors (general practitioners) were conducted. Interview guidelines developed by the team at the London School of Hygiene & Tropical Medicine were adapted to the Kyrgyz context and piloted with two policy-makers. The questionnaire was semi-structured and included additional probes under each health system building block. The interviews allowed some variation of the sequence of topic areas was possible, but covered key areas of the framework of the *Good health at low cost* project (see Figure 2.3).

Twenty-eight in-depth interviews and five focus groups (three to five people per group) were carried out across the country. There were no refusals. On average,

Table A.4   Key data sources, Kyrgyzstan (examples)

Types of databases	Time periods	Variables of interest
Household surveys		
UNICEF Multiple Indicator Cluster Surveys	2006	Maternal mortality ratio Infant mortality rate Under-5 mortality rate
DHS	1997	Maternal mortality ratio Infant mortality rate Under-5 mortality rate
Health module of the Kyrgyz Integrated Household Survey	2001, 2004, 2007, 2010	Financing burden (OOPs) Equity Access to health care Effectiveness of health system
Discharged patient survey	02/2001, 07/2001, 04/2003, 04/2004, 10/2006	Financing burden (OOPs) Equity Access to health care
Administrative reports		
Republican Medical Information Centre		Cardiovascular disease Tuberculosis HIV/AIDS Human resource indicators
National Statistic Committee (non-health system indicators)	1990–2009	Macroeconomic indicators (GDP, poverty rate, etc.) Education Gender Governance
Millennium Development Goals revised report	2010	Maternal mortality ratio Infant mortality rate Under-5 mortality rate
National Health Accounts	2010	Total health expenditure OOPs
International databases		
WHO Health for All database	01/2011	Cardiovascular disease Tuberculosis Life expectancy Financing indicators (total health expenditure, OOPs)

Note: OOP: out-of-pocket expenditure

Table A.5   Characteristics of key informants, Kyrgyzstan

Key informant types	Total number	Mean age (years)	Gender		Professional background					
			M	F	Medical doctor	Nurse	Public health	Econo-mist	Acade-mic	Other
National level	9	45	4	4	4			3		2
Oblast level	11	55	7	4		4		3		4
District level	15[a]	55		15	8	5				2
International organizations and projects	5	45	5		3			1	1	
Former government policy-makers	3	65	3	1	1					2
Total	43	54.2	19	24	16	9		7	1	10

Notes:

National level: Central Agency of Development, Investment and Innovations; Ministry of Health; State Agency of Social provision; State Mandatory Health Insurance Fund; NGOs; etc.

Oblast level: Territorial hospitals, family medical centres, *oblast* social departments within the local authorities, territorial departments of the Mandatory Health Insurance Fund.

District level: Family group practices, feldsher–midwifery posts, village health committees.

International organizations and projects: WHO, World Bank, UNICEF, Medicines Transparency Alliance.

Former policy-makers: A few key informants who used to work in the government.

[a] Five focus groups at *rayon* level with doctors with 3–5 people.

interviews lasted between 1.5 and 3 hours and were tape-recorded. Sampling was purposive, seeking to identify people who had played key roles in the policy process and health system development during the previous 20 years. Respondents were selected from four *oblasts* (districts), to represent regional variation; exposure to, and experience of, reforms; and a mixture of resource constraints. Table A.5 presents the characteristics of all key informants.

Data analysis

Interview guidelines developed by the team at the London School of Hygiene & Tropical Medicine were adapted to the Kyrgyz context and piloted. The semi-structured questionnaire was developed in Russian and included additional probes under each health system building blocks. As well as the themes identified under the remit of health, the Kyrgyz team reviewed different local reports

and policy briefs on non-health sectors themes, such as gender, education, employment and poverty reduction, to supplement the health-sector information. As a result, triangulation of evidence from multiple sources was conducted.

◼ Tamil Nadu

Quantitative methods

Data sources

Information was drawn primarily from secondary sources both at national and state levels to make a comparison between Tamil Nadu and the rest of India. Certain indicators, such as out-of-pocket expenditure and equity, were estimated using National Sample Survey Organisation (NSSO) data. Table A.6 summarizes data sources, time periods and variables used.

Data analysis

The primary approach was time-series analysis, tracking the progress in health systems inputs, outputs and outcomes over a period of approximately four decades.

Qualitative methods

Literature review

Review of literature included both published and unpublished academic as well as administrative documents on determinants of health improvements, economic and social factors that might have affected health, the historical evolution of the Tamil Nadu and the Indian health system, achievements and challenges, and evidence on how policy-makers and implementers managed to improve health outcomes. The databases PubMed, EconLit, EBSCO and ScienceDirect were used to collect literature on both health and non-health system factors. Other sources of documentary evidence included Five-Year Plan documents, health policy reports, policy documents of the Tamil Nadu State Government, performance reports of the Department of Health and Family Welfare (Government of Tamil Nadu), surveys undertaken by central and state government agencies such as the NSSO, the International Institute of Population Sciences and publications relating to India by international organizations such as World Bank, WHO and UNICEF.

Table A.6   Description of key data sources for analysis, Tamil Nadu

Types of databases	Time periods	Variables of interest
Household surveys		
Morbidity and Health Care (NSSO)	1995–1996 2004	Non-hospitalized and hospitalized illnesses Health care choices and quantity of service used Sociodemographic characteristics
National Family Health Survey (NFHS)	1992 1998 2005	Family welfare and health indicators by background characteristics at the national and state levels Perinatal mortality, adolescent reproductive health, high-risk sexual behaviour, tuberculosis, malaria
Census of India	1991 2001	Literacy, sex ratio
Sample Registration System (SRS) Bulletin	1985 1990 1995 2000 2005	Vital events such as birth rate, death rate, infant mortality rate, maternal mortality ratio, under-5 mortality
Administrative reports		
Vital statistics	1971–2007	Population and vital statistics (life expectancy, infant, child and maternal mortality, and crude birth rate)
Policy Note, Department of Health and Family Welfare, Tamil Nadu Government	1985–2006	Budget, number and type of hospitals, beds, doctors, nurses, and others; child immunization coverage of various basic vaccines
National Health Accounts, India	2001/2002 2004/2005	Health spending by functions, financing agents, and health care providers
Statistical Handbook of Tamil Nadu	1996–2008	State GPD
International databases		
University of Washington Institute of Health Metrics and Evaluation	1970–2007	Under-5 mortality Vaccination for diphtheria, pertussis, tetanus coverage 1982–2006

Table A.7   Characteristics of key informants, Tamil Nadu

Key informant types	Total number	Mean age (years)	Gender		Professional background					
			M	F	Medical doctors	Nurse	Public health	Economist statistician	Acade-mic	Other
Policy makers at the federal/state level										
Serving	5	53	3	2	3					2
Retired	15	67	11	4	13					2
Implementers, MOPH (in 3 provinces)	10	35	6	4	5	3	1	1		
Research institutes	4	55	2	2	2			2		
Outside MOPH	5	51	3	2	2			1	1	1
Total	39	55	25	14	25	3	1	4	1	5

Key informant interviews

In-depth interviews were carried out with four groups of key informants in 2010: policy makers in the Ministry of Health and Family Planning (both of the Government of India and of the Government of Tamil Nadu), retired health administrators (directors) who were at the helm of the affairs during the 1980s and 1990s, and administrators (technocrats) in service, researchers and respondents in other sectors. Details are provided in the Table A.7.

Fifteen retired health administrators, who had seen the evolution of the health system and were in key positions in the 1980s and 1990s, were identified from the list provided by the Directorate of Medical Services and snowball sampling used to identify further respondents in the Department of Health and other sectors until a consensus has reached about the evolution and factors responsible for the development of the sector. Semi-structured questionnaires were used as a guideline and most of the interviews were recorded with their oral consent. On average, interviews lasted 2.5 hours.

Data analysis

Using content analysis, a descriptive narrative was prepared, and information was triangulated in several ways including with published literature.

■ **Thailand**

The country chapter drew on series of quantitative and qualitative analyses that supplemented each other and sought to identify factors promoting health and access to services over time.

Quantitative methods

Data sources

Information was drawn from both primary and secondary sources used regularly for the monitoring and evaluation of health systems in Thailand[1,2], and a number of national household survey datasets were re-analysed. Table A.8 summarizes data sources, with time periods and variables used.

Data analysis

The primary approach was time-series analysis, tracking the progress in health systems inputs, outputs and outcomes over a period of approximately four decades.

Changes in health infrastructures and human resources over time were normalized to population density ratios using the Ministry of Interior Department of Public Administration's reports on the mid-year population.

Average annual changes in important outcome/output and input indicators were determined for each major event period using interrupted, time-series analysis. Serial correlation between the current value and its lags was controlled for using an appropriate auto-regressive model.

Qualitative methods

Literature review

The authors carried out reviews of relevant published and unpublished literature on determinants of health improvement, wider economic and social changes that might have improved health, the historical evolution of the Thai health system, achievements and challenges, and evidence on how policy-makers and policy implementers had managed to improve health outcomes. Other sources of documentary evidence included a long series of national Five-Year Health Development Plans, published literature relevant to maternal and child health in Thailand, and publications relating to Thailand by international organizations such as WHO and UNICEF.

Table A.8   Description of key data sources for analysis, Thailand

Types of databases	Time periods	Variables of interest
Household surveys		
Health and welfare surveys	1974–1978 (q 1 yr) 1981–2001 (q 5 yr) 2003–2007 (q 1 yr) 2009 onward (q 2 yr)	Non-hospitalized and hospitalized illnesses Health care choices and quantity of service used Sociodemographic characteristics
Socioeconomic surveys	1957–1986 (q 5 yr) 1988–2006 (q 2 yr) 2007 onward (q 1 yr)	Consumption and non-consumption expenditures including for health care Earned/unearned money and in-kind incomes Socioeconomic status variables
Surveys of population change	1942–1952 1965–2005 (Inter-census, q 10 yr)	Births, deaths and migration
Population and housing census	1909–1929 1937–1947 1960–2010 (q 10 yr)	Births, deaths and migration
Administrative reports		
Vital statistics	1957–2007	Population and vital statistics from national civil registration systems (life expectancy, infant, child and maternal mortality, and crude birth rate)
Health Resource Surveys	1962–2007	Number and type of hospitals, beds, doctors, nurses and others
National Health Accounts	1994–2008	Health spending by functions, financing agents and health care providers
Thailand health profiles	1996–2008	Child immunization coverage of various basic vaccines
International databases[3]		
	1970–2007	Under-5 mortality Vaccination for diphtheria, pertussis, tetanus coverage 1982–2006[4]

Table A.9   Characteristics of key informants, Thailand

Key informant group	Total number	Mean age (years)	Gender		Professional background					
			M	F	Medical doctor	Nurse	Public health	Econo-mist	Acade-mic	Other
Policy-makers, MOPH at national level	4	61	4		4					
Implementers, MOPH (in 3 provinces)	11	53	5	6	5	5	1			
Research institutes	2	55	2		2					
Outside MOPH	5	52	3	2	2			1	1	1
Total	22	55	14	8	13	5	1	1	1	1

Key informant interviews

In-depth interviews were carried out with four groups of key informants during the first half of 2010: policy-makers in the Ministry of Public Health (MOPH), implementers (technocrats) in the MOPH, researchers, and respondents in other sectors (Table A.9). Two eminent key informants (policy-makers) were identified initially, and the snowball sampling was used to identify further respondents in the MOPH and other sectors until no new information emerged. Semi-structured questionnaires were used and there were no refusals. On average, interviews lasted 1.5–3 hours and were tape-recorded (with permission).

Data analysis

Content analysis was applied, a descriptive narrative prepared, and information was triangulated in several ways including with published literature. A member of the research team was also interviewed as an eyewitness of district health systems development.

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