Západočeská univerzita v Plzni

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Bakalářská práce

ANALYTICAL REPORTS: THEIR EVOLVING PREVALENCE IN TODAY´S BUSINESS ENVIRONMENT

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Prohlašuji, že jsem práci zpracoval(a) samostatně a použil(a) jen uvedených pramenů a literatury.

Plzeň, duben 2012 .....

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1 INTRODUCTION

As the title suggests, this Bachelor thesis deals with business correspondence. However, the topic of business correspondence is very wide, and hence this thesis deals with business reports, especially analytical reports and their evolving prevalence in today's business environment.

The first part of my thesis is the theoretical part and it is divided into two main chapters. The second part is the practical part and there will be analysed three analytical reports.

In the theoretical part is covered all essential information concerning the business reports, especially analytical reports. In the first chapter of the theoretical part are described: essentials, functions and types of business reports; differences between informational and analytical reports; features of three main types of analytical reports; how to select the topic of analytical reports; which parts should standard analytical report contain and which writing style should the author of analytical report use. In the second chapter is defined the business environment (internal and external environment) and organizational strategies (direct and indirect strategy). The purpose of this part is to gather all needful information concerning analytical reports and it may help some beginners with planning and writing analytical report.

In the practical part I will be analysing three given analytical reports. These reports were provided to me by the consulting company PWC. In analyses of reports I will be focusing on evaluation of the style, language and lexis. Reports will be analysed from six points: which tenses are used in the reports, phrasal verbs and idiomatic expressions, active and passive voice, the grammatical person, abbreviations and acronyms, visual aids. This part also contains summary of the answers from questionnaire which can be found in the appendices. These questions were answered by a representative of the company PWC. Analysed reports can be found in the appendices of this thesis, but certain parts of these reports are not included because of their length, and also for the printed version I reduced the number of pages by putting 6 pages of the report on 1 page of the thesis. The version which is not reduced can be found in the electronic form in attached CD.

The reason why I chose this topic is fact that I found it very interesting and current and it may be useful for my future career.

I gathered the information from English literature, mostly from: KUIPER, Shirley. Contemporary Business Report Writing and GUFFEY, Mary Ellen and LOEWY, Dana. Essentials of Business Communication.

The aim of this thesis is to find out whether analytical reports are prevalent in today´s business environment.

THEORETICAL PART

2 ANALYTICAL REPORTS

Any business and professional communicator has already met with reports because reports are a fact of life in business today. Business reports are about analyzing the problems, gathering and studying the facts, and then assessing the alternatives. There are different ways how to submit business report: in writing, orally or digitally. Recently is very popular to present the reports in a PowerPoint accompanied by a written report. Business reports are very difficult to define because of their diversity. They range from informal one-page reports to formal 250-page reports. Some reports only give information while others also analyze and make recommendations. They differ in many ways but they have one thing in common: to answer questions and solve problems.

2.1 Report essentials, functions and types

2.1.1 Functions of Business Reports

Business reports have various functions. They must be planned and presented with the regard of the receiver's needs and the sender's objectives at the same time. Effective report writer is trying to achieve desired action-it means what the sender wants the receiver to do. But to accomplish that action, the sender must take information needs (data that allow the receiver to understand and fulfil the sender's desires) and ego needs (person's desire for recognition of his/her worth to the organization) of the receiver into consideration.

There are two basic structures for most messages-the indirect and the direct structure. Indirect structure moves from specific examples or facts to generalized conclusions. It is used for complex or controversial information. Direct structure moves from generalizations to specific examples or facts to support them. It is used in case when the receiver is likely to agree with the main thought of the message. It is also effective with receivers who want to know the main thought immediately and it does not matter if they agree or disagree with it.

Because reports are used in the decision-making process, the reader must be able to believe the information which is contained in a report. "*Deliberately excluding information that may be unpleasant to the writer or the receiver violates the objectivity criterion, which requires that all available, relevant data be presented."* [1]

Report data may have many sources. Report can also contain the observations of the writer. Personal observations or experiences may be presented in addition to impersonal facts, but all information must be presented objectively. Some reports provide information necessary for making decisions; others impart information about decisions that have been made and must be implemented. Reports are used in every kind of job, because people at all levels of an organization have to carry out decisions. Reports hold many functions in the organization, but the primary function is to enhance the decision-making process and the quality of actions based on those decisions.

2.1.2 Classifications of Business Reports

Reports take many forms. They are not standardized messages. Report classifications can help with the decisions what type of report to choose that will best achieve the reporting objective. There are six ways, in which reports can be classified: by function, frequency, subject matter, level of formality, reader-writer relationship and communication medium.

Function

There is two major functions of the reports: to inform or to analyze. More details about this subject are in chapter 2.1.3.

Frequency

That means how often the reports are transmitted. Periodic reports are transmitted at stated times (daily, weekly, monthly, quarterly or annually). Another type of periodic report is a progress or status report. It is used to inform decision makers about the status of an ongoing project. In contrast, special reports refer to an one-time or an infrequent event.

Subject matter

Some organizations classify reports by areas which correspond to functional divisions of the organization, such as accounting, production, finance or engineering.

Level of formality

Level of formality can be identified by tone and structure. In some contexts are expected formal tone and structure. Other contexts justify informality. In formal report is typically used impersonal language, and is followed a prescribed format. Formal reports are often presented in manuscript form. Informal reports have more personal tone than formal

reports. There are used first-person and second-person pronouns and near-conversational language. Many informal reports are presented orally.

Reader – Writer relationship

It refers to the relationships that those parties have to one another. If the report passes between writer and reader in the same organization, then it is an internal report. It can be also management report, staff report or committee report. If the report moves across organizational boundaries, then it is an external report. For example audit report presented by an independent accounting firm to a client is an external report.

Communication medium

Reports can be classified by the dominant communication tool or medium. According to this classification reports are called written or oral, narrative or statistical, illustrated or unillustrated. Multimedia reports use combinations of communication tools. [2]

These classifications of reports demonstrate that reports are presented in many forms.

2.1.3 Types of Business Reports

There are two bases of classifying the reports – according to function and according to formality. According to functions, the reports may be divided into three parts: Informational reports (this is further divided into five parts: Periodic reports, Situational reports, Investigative reports, Compliance reports, Progress reports), Analytical reports (this is further divided into three parts: Justification/Recommendation reports, Feasibility reports, Yardstick reports), Research reports. According to formality, the reports may be divided into two parts: Statutory reports, Non statutory or voluntary reports (this may further be divided into two parts again: Routine reports, Non-routine reports).

Informational reports

Informational reports present facts about certain given activity in detail without any note or suggestions. They give the needed insight to evaluate a firm's operations, profitability and stability. Informational reports are also used to evaluate the experience of the business, and business background of principals. They include valuable information that can help make better business decisions. Informational reports are packed with

information, analysis, and interpretations to enhance decision-making process. They include payment records, financial information, banking commentary, and a description of the firm's operation. [3]

Periodic reports

Periodic reports help the management to make their policies, procedures and products according to the consumer´s requirements and management can decide how to develop their organization for more mutual benefits.

Situational reports

Situational reports era targeted to nonrecurring situations (situations that do not have a definite pattern of occurrence). They are written like Memos. They follow an informal tone. Situational reports are usually short and could vary on authorizer expectations. It can be Trip, Convention, or Conference reports – They are submitted by employees when they return from a business trip, convention, or a conference. They keep their organizations well informed, and also inform management about new procedures, equipment, and laws. They should be brief and factual. The purpose of these reports is to provide information, whether the company benefits from the travel.

Progress reports

Progress reports explain continuing projects, including work in progress, future activities, and completion date. These reports may whether describe project status (internal report), or advise customers about the progress (external report). They also inform the management, whether the project is going in the right direction, and whether the project will be completed as planned. They must be written in a style, structure, and format that permit the manager to learn quickly what is happening on a project. [4]

Investigative reports

Investigative reports are assigned reports which focus on examining a situation, or a problem. These reports are nonrecurring, and they are presented in a direct structure.

Compliance reports

Compliance reports present data in compliance with local, state, and federal laws. Government regulating agencies require submission of these reports.

Analytical reports

More about Analytical reports in chapter 2.2.

Research reports

Research reports are based on some research work, which is done by an individual, or a group of individuals on a given problem. They follow indirect structure. Research reports start with problem discussion. Then they explore possible solutions and give reason for selecting a particular solution. There are two types of sources: Primary sources and Secondary sources (more about primary and secondary sources in 2.2.4).

Statutory reports

Statutory reports are presented according to the requirements of a particular law. They are usually prepared in the prescribed form.

Non statutory reports

Non statutory reports are reports of directors on some special issues, for example, committee reports. They are not mandatory, but if there is an important issue to be discussed at the meeting they are required to be presented either by directors, or auditors.

Routine reports

Routine reports are required to be submitted periodically. They are generally brief and only give the facts, for example, what is happening in the organization, what is its progress, what measures have been taking in solving problems, etc. For example, weekly production report is a routine report. There are usually no comments, or explanations.

Non-routine reports

Non-routine reports are required to be prepared on matters of special nature. Examples of non-routine reports are interview reports, exception reports and staff reports.

Interview reports

Interview reports are not regular, but occasionally anyone can be assigned to a special project that requires interview people to obtain some information. Then is expected the summarization of the obtained information in a report. There should also be mentioned the information about when, where, and how the interviews were conducted, and also relevant comments about the experience.

Exception reports

Exception reports bring information about differences from the normal operations of the organization. They may present facts only about the deviation, or they may include additional information. In these reports should be used techniques, which simplify, and clarify the message.

Staff reports

Staff reports usually analyze a problem about which the manager must take action. They may be prepared in any suitable format. Managers assign these reports to their staff because they are too busy, and that is why the staff reports should help quickly extract the essential information.

2.1.4 Difference between Informational and Analytical Reports

Informational reports present data without analysis or recommendations. The writers collect and organize facts, but they are not expected to analyze it for readers. These reports require routine operations, observance of regulations, and company policies. Some informational policies are highly standardized, such as police reports, or monthly sales reports. Other informational reports are more personalized.

Analytical reports provide data, analyses and conclusions. Analytical business reports offer information which is connected with a specific company. Information is often presented in the form of graphs, or statistics. Analytical reports are written for different purposes. It depends on who needs the data. Analytical reports call on to answer questions, to ask which product is the best, or is an idea good etc. They call for research, interpretation, and recommendation. Good analytical reports require critical thinking and the clear communication of ideas. Analytical reports provide not only objective answers, but also provide company executives with a view of any potential problem, or areas that need attention. Although it may not have been the purpose, analytical reports may reveal any patterns. Company executives may use analytical reports

to plan ahead. In view of the fact, that analytical reports provide answers in term of trouble areas, executives can make changes to the products, or budget, in order to get a more successful financial period in the upcoming year. In spite of the fact, that future planning may not be the purpose, the data can help plan for a more prosperous financial period. Analytical reports may address two, or more analytical problems. They present the findings of the writer's research using quantitative, not qualitative methods.

2.2 Analytical reports in business

2.2.1 Justification/Recommendation reports

Purpose of Justification/Recommendation reports is to make recommendations to management, and to provide data to solve problems and make decisions. In these reports can be used both, indirect or direct structures. However, there are some steps to follow in decision-making of which structure to use. If the subject is insensitive, and the readers are perspicacious it is recommended to use a direct structure (for example justifying a purchase). Otherwise, if the readers are sceptical, and the subject is sensitive it is recommended to use an indirect structure (for example justifying ways for employees to quit smoking). These reports can be used on various topics, such as changing a procedure, hiring an employee, consolidating departments, investing funds, or buying equipment. If the author decides to use the direct structure, here are some steps to follow. Firstly, there must be brief identification of the problem. Secondly, author must write recommendation, solution, or action, and explain the benefits of the recommendation, or what steps should client take to solve the problem. He must also include the discussion of pros, cons, and costs. In the final part must be summarization which specifies recommendation, and action which is necessary to be taken. On the other hand, if the author decides to use the indirect structure, here are different steps to follow. In the subject line, the author must make general reference to the problem. Secondly, the author must describe the problem by the usage of some specific examples, statistics, and authoritative quotes to show that the problem is serious. Next there must be the discussion of alternative solutions, and the writer should begin with the one which has minimal chances to succeed, and terminate with the one which is the most promising. In the next part must be emphasized that in recommendation the advantages overweigh disadvantages. In the final part is summarization of the recommendation and writer may ask for authorization to proceed. [5]

2.2.2 Feasibility reports

Purpose of feasibility reports is to analyze problems, and predict, whether alternatives will be practical, or advisable. They also help in decision-making process. The role of the writer is to present the decision immediately because the person requesting the report is interested especially in the recommendation. These reports are used, for example, before large capital investment, a new product, or service, or a new plant location. They answer these questions: What is the best location for the company? Should the company rent, lease, or buy? Should the company move to another part of the country? In writing feasibility reports there are some steps to follow. Firstly, there must be an announcement of the writer's decision. Secondly, the writer has to give a description of the background and the problem. Short discussion of the benefits of the proposal and description of any problems that may result must be written after this. In the final part, author must mention how much time will client need to implement the proposal, and he may also calculate the costs. [6]

2.2.3 Yardstick reports

The term "Yardstick" is used in reference to anything which serves as a test, or standard of measurement, comparison, or judgement. These reports deal with problems with two, or more solutions. They measure each of the solutions, and then make a final judgement according to which solution would work the best. Yardstick reports can be used, for example, to comparison of different manufacturers for buying a piece of equipment. There are some steps to follow during the writing yardstick reports. The beginning must contain the description of the problem. Secondly, there must be explained possible solutions and alternatives. Next step includes establishing criteria for comparison and their discussion. In the final phase, the author draws conclusions and makes recommendations. [7]

2.2.4 Selecting an Analytical Report Topic

The authors of analytical reports have several options when selecting a topic. The most important choice is to select data sources. The validity and reliability of the data used in report is one of the most important things to make a good report. The quality of the data is basic element of the quality of the report. Therefore, the author of report must be very good at selecting appropriate data sources and must use them precisely. There are two types of data: Primary Data and Secondary Data.

Primary data

Primary data are data which are obtained through original experiments, interviews, observations, questionnaire surveys, and company records. Primary source is a researcher's direct report of his or her primary research and experimentation. It contains measurable data and a detailed discussion of methodology. There are both, active or passive methods to obtain information from these sources. When the author of report just makes observations of the people, or actions that are essential for the report, and does not actively communicate with those subjects, this is called Passive data collection. It includes search of company records, observations, and some experimentation. On the other hand, there is Active data collection. The author of report actively communicates with the subjects. It includes questioning the subjects. Sometimes the only way to get necessary information is through questioning. The writer must decide, whether to choose active, or passive method according to ability to obtain precise data and satisfy other important criteria.

Secondary data

Secondary data are data that have already appeared in books, magazines, journals, and other published documents. They can also be found on online services and CD-ROMs. Secondary source is a summarization, or commentary of another researcher's primary research. It may contain some data from the original source, but it does not contain all the data and conclusions of the original source. Secondary data can help determine what must be examined. They may contain sufficient data for solving problem without collecting primary data. The thing is, that in some secondary sources writer may find more valid data than in primary sources.

If the report writer wants to be effective in solving business problems, he will use both, primary and secondary source. Some researchers think that the primary data are better than secondary data, because information straight from the source is better than secondary data. Others do not like to sit in a library, search through documents. On the other hand, some researchers think that primary data are not accurate. According to them people can misrepresent self-reported information and other researcher can make wrong observations. None of these attitudes can produce consistently effective reports. When a problem and need for research are recognized the writer should first look into secondary sources, because they have information that can more clearly identify the problem, and

parts which the writer should investigate. If the problem is unique, the writer probably has to use primary data, because it may be the only information. But if there is some sufficient secondary data available, the writer should use them instead of spending lot of time and effort on correct and effective usage of primary data. [8]

2.2.5 Limiting an Analytical Report Topic

Some writers of analytical reports struggle to sufficiently narrow and limit their topic when they are confronted with the task of writing an analytical report. They may have topic in their mind, but they may be not sure how to approach to it. Generally, the writer can limit the topic by date, locality, category, or discipline/profession.

DATE

When the writer is limiting the topic by date he has to choose the time frame in which he will be examining his topic. For example, the writer decides to evaluate the death rate on tobacco products from 2000-2008.

LOCALITY

When the writer is limiting the topic by locality he has to choose specific place in which he will be examining his topic. For example, the writer wishes to investigate why New York has 200% higher death rate on tobacco products than the national average.

CATEGORY

When the writer is limiting the topic by category he has to narrow the scope of inquiry to one specific type, or aspect of the larger topic. For example, the writer decides to explore the effectiveness of electronic cigarettes to help people stop smoking.

DISCIPLINE/PROFESSION

When the writer is limiting the topic to a discipline, or profession he examines how is the topic interacted with specific discipline, or profession views. For example, the writer decides to examine why nurses of maternity ward smoke more cigarettes than nurses of isolation ward.

2.2.6 Writing an Analytical Report

When the author has chosen the topic of analytical report, and has selected appropriate data sources he can begin to write the analytical report itself. Since the analytical reports are ranked among the formal

reports, they have several parts that are not included in less formal reports. Each report is composed of three main parts: Report preliminaries, Report body, and Report supplements. In the illustration below is listed the structure of analytical report.

PARTS OF AN ANALYTICAL REPORT
1. Report Preliminaries (sometimes called Front Matter)
1.1 Cover or binder
1.2 Flyleaves
1.3 Title page
1.4 Transmittal message
1.5 Authorization message
1.6 Acceptance message
1.7 Table of contents
1.8 List of tables or figures
1.9 Foreword or preface
1.10 Acknowledgments
1.11 Synopsis or executive summary
2. Report Body
2.1 Introduction
2.2 Presentation and discussion of findings
2.3 Summary, conclusions, and recommendations
3. Report Supplements (sometimes called End Matter)
3.1 Endnotes
3.2 Bibliography, source list, or references
3.3 Glossary
3.4 Appendix
3.5 Index

REPORT PRELIMINARIES

The preliminary parts help in the first place the reader to locate specific information easily. They also enable to carry the report physically. *“Although the report preliminaries are the first pages the report user sees, many of those parts can be compiled only after you have written the full report. The preliminary parts must accurately reflect the report´s content and structure.”* [9]

Cover or Binder

The report document must be convenient for the reader to handle. Most of the readers prefer when the report is bound securely. On the other hand, some readers may prefer unbound pages. The main purpose of cover, or binder is that it protects the pages of the report, and it also

forestalls from loosening. On the report cover should be shown at least the title of the report. If the writer wants to suggest the content of the report, then can be included design, or illustration.

Flyleaves

Flyleaves are blank sheets which may be placed, either at the front of the report, either at the back of the report. Their purpose is to protect other pages, and to provide some space if the reader wants to leave comments. These sheets are not obligatory. They are used in high level of formality. For example, flyleaves can be found in most hard cover books, but not so many in soft cover books.

Title page

On the title page can usually be found four facts: the full title of the report, the identity of the person demanding the report (it includes full name and address), the identity of the author (it includes full name, address and telephone number or e-mail address), and the date of submission. *" Although inclusion of the author's identity is optional, it may be advantageous to include such information on all reports unless you are instructed not to do so. Such information will help readers provide feedback, such as questions, commendations, or requests for new projects."* [10] On the title page is no page number.

Transmittal message

The transmittal message presents the report to primary reader(s). Some authors prefer to present transmittal message as a separate message which accompanies the report, but most of the writers bind this message within the report, and it is bound before, or after the title page.

Authorization and Acceptance messages

The authorization message gives evidence that the author got the permission to undertake the project. The acceptance message affirms that the task was agreed on.

Contents

The table of contents appears usually if the report is long. It helps the reader to get a summary of the report and the reader can easily find specific parts of the report. In the table of contents must be listed all items which will follow the table of contents. The number of pages must be also

identified. If the report includes visual aids, the author will also write a list of table or figures.

Preface

In the preface should be mentioned some special details about the report. The author should be mentioning what encourages him to do the project, and how significant is the project. If, however, that information is already expressed in some part before the preface, the author can omit the preface.

Acknowledgments

Acknowledgments page serves as opportunity to thank to people who have assisted with the project. Acknowledgments are often written in the first person.

Executive summary

It is also called synopsis. *"In this summary, briefly state the research problem, purpose, research methods, major findings, conclusions, and recommendations. The summary must contain enough information to help a reader decide how much of the full report he or she should read."* [11] Many readers prefer if the executive summary is written in the direct structure, although the rest of the report may be written in the indirect structure. That means that the executive summary begins with author's recommendations. The length of executive summary is usually no longer than one page and the way how to accomplish this reduction is that the author reduces each important section into one paragraph. However, the length of executive summary can be longer than one page. It depends how long and complex is the analytical report.

REPORT BODY

Report body must contain all details and information of the study. When the body of an analytical report is written in the indirect structure, it begins immediately after the executive summary and it contains these parts: introduction, complete presentation, discussion, summary of findings, conclusions and recommendations.

Introduction

In the introduction part should be all necessary information to understand the rest of the report. If the report is written in the indirect structure, the

introduction contains background of the problem, statement of the research problem, scope of analysis, and the research methods.

Findings

Findings is the major part of the report. It contains presentation and discussion of findings. In this part the author must present all data and their complete and clear analysis. The author should also specify in the first paragraph how this part will be organized.

Summary

Analytical reports should always contain summary of the findings. The author may also make summary of findings at the end of each major part, if the report is complex and lengthy. The summary can be separate, or can be incorporated in the part with conclusions and recommendations.

Conclusions and Recommendations

Conclusions and recommendations create the final parts of the reports which are written in the indirect structure. On the other hand, if the reports are written in the direct structure, the conclusions and recommendations may be presented at the beginning of the report. *"Conclusions must be logical inferences supported by the data analysis. Recommendations propose actions that are justified by the analysis and conclusions; recommendations may also suggest other research that should be undertaken."* [12]

REPORT SUPPLEMENTS

In the report supplements can be found any information which is not essential for understanding the report body, but it may be useful. Among report supplements can be incorporated these parts: endnotes, bibliography or source list, glossary, appendix, and index.

Source list

If the author decides not to use footnotes he must add at the end of the report source list. In this list must be mentioned all the sources that contributed data for the study.

Glossary

Glossary is a list of chosen words and their meanings. Glossary is required only when the text of the report contains some terms or

expressions that may be unfamiliar to the readers. Author may also use the glossary when among readers are some persons who know the terms, and some who do not.

Appendix

In the appendix can be found all items which refer to the report body, but they are not displayed in it. It can be various materials, such as copies of interview guides and questionnaire, tabulations of data, statistical formulas, graphs, charts, and diagrams. However, some of these materials can be incorporated into the report narrative.

Index

"An index is a list of key words or topics found in the report. Generally, an index is included only if the reader would not be able to locate specific information without that aid. In most situations, a comprehensive table of contents along with clear, concise division headings should be sufficient to direct the reader to specific topics." [13]

2.3 Writing style

2.3.1 The Basics of Business Writing

Business writing is different from other writings, the business writers have different goals than other writers. Business writing should be purposeful (solve problems and convey information), persuasive (persuade readers to believe and accept the message), economical (present ideas clearly but concisely), and audience oriented (concentrate on looking at a problem from objective site). Many college graduates entering industry think that in writing quantity enhances quality. But it is not true, longer is not better. "*Conciseness and clarity are what counts in business*." [14] Not many people can compose a terrific report without training. However, practicing and following a systematic process can make almost everyone a good writer.

2.3.2 The Writing Process

The process is easier if the writer follows a systematic plan. The writing process has three parts: prewriting, writing, and revising. However, the process is not always strict. It is not always from Step 1 to Step 2. The writer must often go back and repeat an earlier step. The first phase is prewriting. It involves analyzing the target readers, and the purpose for writing. It involves also anticipating how the readers will react to the message. The second phase is writing. It involves researching,

organizing, and composing the message. The third phase is revising. It involves revising, proofreading, and evaluating the message.

2.3.3 Types of Languages

There are many different types of languages in business writing. The first type is positive/negative language. The tone of a message is significantly improved if the author uses positive, rather than negative language. Positive language usually tells more information than negative language. Another type is courteous language. Courteous tone is against rudeness and is also trying to avoid words that sound demanding or preachy. Another type is inclusive language. "*A business writer who is alert and empathic will strive to use words that include rather than exclude people."* [15] Words which seem to exclude females are called sexist.

2.3.4 Writing in Teams

Many of today's workers work in teams to better achieve their objectives. If the project is big, has short deadline, and requires the expertise of many people, the team collaboration is necessary. Writing in the team has many advantages and that is the reason why team-written documents are standard in most organizations. The most important thing in team writing is that many heads are better than one, and hence they can produce a better product. And also working together helps socialize members. However, the members of the team do not cooperate in each phase of the writing process. At the beginning, the team members assemble to brainstorm. Then they allocate segments of the project to individual members. In the phase 1 (prewriting) teams work together. On the other hand, in the phase 2 (writing) they work separately when they draw up the first draft. During the phase 3 (revising) teams may work together to combine their drafts. In case when team members are not physically in the same location they are forced to use online collaboration tools, such as e-mail, mailing lists, discussion boards, etc.

3 BUSINESS ENVIRONMENT

Business environment can be defined as set of conditions (social, legal, political, institutional and economical) which affects the functioning of organization. Business environment is composed from External environment and Internal environment.

3.1 External Environment

External environment means that organizations are subjects which are connected with the outside world. External environment is complex and unstable. This environment can influence business activity in many ways, such as economical, technological, legal, political, demographic, and social. This can impact on transformation process. External environment can be distinguished according to two types of external factors: 1.Those who have more immediate influence (immediate or operational environment), 2.Those who have more general influence (general or contextual environment).

Into immediate environment can be classified suppliers, competitors, customers, labour markets, and financial institutions.

Resources and resource markets are necessary for organizations, and that is why the organizations are dependent on suppliers of those resources. Success of an organization may be influenced by activities of an individual supplier or resource markets. Similar situation occurs with supplier, because he is often connected with the decisions of the customer.

Customers are essential to all organizations. Every organization does its best to satisfy both requirements: to identify and to meet consumer needs. It is one of the most important things for organization to survive and maintain the prosperity. This idea of producing things to satisfy customer’s demands is a main principle of the market economy.

Competitors do direct and indirect competition. Both of them are very important for many firms. Its effect can be seen at macro, as well as the micro level, and it is obvious in changing structures of many advanced industrial economies.

General environment is composed of factors such as technological, economic, socio-cultural, political and legal influences. These influences

can come out from local and also international sources. The factors are frequently referred to as the 'PESTLE' factors (political, economic, socio-cultural, technological, legal and ethical). Some firm can use 'PESTLE' analysis to analyse its current and future environment.

The political environment impacts on business activities from general questions to more specific questions. Government has the biggest influence on business activities. One of the questions is how the government involves in the working of the economy. One of the crucial aspects is public opinion in areas, such as corporate responsibility. Another aspect is trend of globalisation of markets and international trading. [16]

The difference between economic environment and political environment is arbitrary, because government has a major role in the economy. However, there are some other economical aspects which are not related to politics, such as comparison of economic theory and practice.

The social, cultural, and demographic factors influence demand and supply. These factors impact the type of products, the markets, and the price. People are essential part of the market.

The technological environment represents technology. "*Technology is both an input and an output of business organizations as well as being an environmental influence on them. Investment in technology and innovation is frequently seen as a key to the success of an enterprise and has been used to explain differences in the relative competitiveness of different countries."* [17]

The legal environment represents the system of law which impinges on aspects of business existence. The status of organizations is usually directed by laws. They also direct organisation's relationships with customers and suppliers and also may influence market structure and behaviour.

The importance of ethical environment has increased, because ethical considerations have bigger influence (particularly among high profile companies) on business behaviour. The firms should behave more responsibly and they should consider what kind of impact they have on people and their communities.

3.2 Internal Environment

Internal environment can be defined as a structure and functions of the organization and the way how to accomplish specified organizational objectives. Enterprise must adapt to new external circumstances and balance different influences on the organisation to be constantly successful. Organization's management takes care of this responsibility and its task is to mixing people, technologies, structures, and environments. Management is a central subject connected with internal environment. In the context of internal environment the management is described as systems of roles which are occupied by persons who manage the organization (entrepreneur, resource manager, co-ordinator, leader, motivator, organiser), and also as a process which helps the organization to identify and achieve its objectives and to adapt to change. The important thing to be considered is that the management should be perceived as a function of organizations, rather than as a controlling element. Managers must incorporate many influences on the organization (people, technology, systems, environment) to help the enterprise if it is needed. Majority of business organizations are characterized by a division of work which brings the opportunity to employees to specialize in particular field and to occupy certain positions trying to achieve organization's objectives. Organization's structure describes relationship between individuals and roles and shows the way by which the purpose and work of the enterprise is presented. The management is responsible for establishing the formal structure of the organization and for that there are many options available. Management can choose any form but it should be the structure which will maintain the success of the enterprise. The structure should consider future requirements of the organization. The principle of structure is the labour division and the formal organizational relationships. These relationships are described in an organization chart. An organization chart is a scheme of role relationships and interactions between individuals. [18]

Modern business organizations often make internal change. It means that firm needs to restructure its organization and environment to remain competitive. The firms can reduce the size and the shape of company (downsizing) or redesign business processes (re-engineering). Downsizing can make a cultural change through which employees notice improvement and innovation and they must accept this structural reform. Because of this structural change, implementing the chosen strategy is strengthened by retraining and it also helps to fulfil the demands of the changing environment. However, the firm may use changing the structure

to solve all of its problems, but in reality the source of its difficulties is in its marketplace. In this situation, downsizing does not make the unattractive products attractive.

The functional areas of the internal organization are Production, Finance, Marketing, Personnel, Research, and Development. These areas and individuals in them transform organizational inputs into output. The management of these functions is the main subject to enterprise become successful and to be able to respond to external needs for change. [19]

3.3 Organizational Strategies

Organizations have desired goals, and hence to achieve these goals they have strategies. Organizations use special organizational processes to guarantee that the strategies ate undertaken in appropriate ways to achieve their desired goals. In business communication the main interest is writing messages or business letters and the question which strategy to use – direct or indirect. Messages or business letters can be either positive, either negative. Most of the messages and letters written in some organization will be positive, because they are dealing with routine matters, and therefore the organization will simply use the direct strategy because there are required straightforward answers. When delivering negative or bad messages or news there are some rules by which the writer should follow when he is deciding which strategy to choose. Every writer must time to time deliver some bad news. This bad news can occur when the goods are not delivered, or the customers are misunderstood. These messages can also end business relationships, decline proposals, refuse requests for donations, terminate employees, turn down invitations, or respond to unhappy customers. They can also be apologies for mistakes in orders, errors in pricing, rudeness of employees, faulty accounting, defective products, substandard service, overlooked appointments, or jumbled instructions. These negative messages must be written carefully because they are disappointing, irritating, and sometimes they bring the anger to the receiver. The receiver may not be so much disappointed if he knows the reason for rejection, feels some sensitivity in revealing the message, sees some seriousness in treatment with the matter, and believes that the decision is fair.

3.3.1 Indirect Strategy

Positive messages are often revealed quickly. On the other hand, negative messages are better to reveal gradually. They are then easier to accept and it also shows sensitivity to the reader. If the reader is well

prepared it may reduce the impact of the bad news. If the receiver reads blunt negative message he may quit reading it and throw the message away. The indirect strategy is utilized to make the receiver finish reading till the end of message, and thereby enable to the writer to explain the reasons for the bad news. The indirect strategy has four parts: Buffer, Reasons, Bad news, Closing.

Buffer is an introduction of the message. It should contain neutral statement that does not mention anything about the negative message, but makes the receiver continue reading.

In the part Reasons the writer gives an explanation of the causes of the bad news and its necessity. The writer should also emphasize that the matter was taken seriously before disclosing it to the reader.

Bad news part contains revelation of the negative message. It should be clear announcement and the writer should not emphasize the negative message. If it is possible this part may include an alternative or compromise.

The final Closing part concludes the message with pleasant, forward-looking statement. The writer may mention good wishes, or sales promotion, but he should not refer to the negative news.

3.3.2 Direct Strategy

Indirect strategy is the best solution in writing many negative messages. However, in some situations is better and more effective to use direct strategy (with the negative message first). Here is a list of situations, where the direct strategy is more appropriate:

1. When the receiver may overlook the negative message
2. When organization policy suggests directness
3. When the receiver prefers directness
4. When firmness is necessary
5. When the negative message is not damaging

PRACTICAL PART

4 ANALYTICAL REPORTS: THEIR EVOLVING PREVALENCE IN TODAY'S BUSINESS ENVIRONMENT

This part of the thesis will deal with practice in analytical reports. I will be analysing three analytical reports. It was very difficult for me to find a good source which would give me some examples of analytical reports, and also answered my questions in the questionnaire which is enclosed in the appendix. I contacted many companies dealing exclusively with analytical reports, such as Ernst & Young, KPMG and PriceWaterhouseCoopers (PWC). Ernst & Young and KPMG refused to co-operate with me because they were too busy with their own projects, and have no people available who could give me high-quality counselling. Fortunately, my friend has a friend who works for PWC, so she immediately arranged a meeting for us. PWC is located in Prague, therefore our appointment also took place there. He told me that PWC is a multinational consulting company, and they deal with (among other activities, such as audit and taxes) consultancy. In pursuance of consultancy, they prepare diverse analyses, which are then presented to clients in the form of some conclusions. He also clarified the reason why the firms probably refused to co-operate with me. Because one problem with these analyses is that the companies often order them, and they are not cheap, and they also frequently contain sensitive data. Then he answered my prepared questions without any problems, and he also provided me with three analytical reports which are open to the public on their web sites. In these reports, I will be focusing on evaluation of the style, language, and lexis.

1. Which tenses are used in the reports
2. If some phrasal verbs or idiomatic expressions are used
3. If there are more verbs used in passive or active voice
4. Which person the majority of the text is written in, if the author preferred singular or plural
5. If there are some abbreviations
6. If the author used some visual aids

4.1 Analytical Reports Used

I will be analysing three analytical reports, which were provided to me by the company PWC. Each of these reports is very different.

The first report is called Water: Challenges, drivers, and solutions, and as the title suggests, the report deals with the big problem of this millennium: water. It was published in March 2012, and was written by a collective of six authors. It has 84 pages in total. The report contains a table of figures, an introduction, the body of the report, the conclusion, and appendices. The body of the report is divided into five sections, and every section has several subsections.

The second report is called Asia: Analytical report for the White Paper on Australia's aid program. This report deals with Australia's aid program and suggestions for its future directions. It was published in September 2005, and written by two co-authors. It has 40 pages in total. The report contains a table of contents, an executive summary, the body of the report, recommendations, conclusions, and a glossary. The executive summary of this report is written in a direct structure because it begins with the author's recommendations.

The third report is called EU – Eurobarometer survey on tobacco. This report evaluates attitudes towards tobacco by EU citizens and Norwegians. It was published in March 2009. It has 98 pages in total. The report contains a table of contents, an introduction, the body of the report, annex tables, and survey details. The body of the report is divided into eight sections.

4.2 Which Tenses are used in the Reports

Verb tenses have several forms, such as the present simple, present continuous, past simple, past continuous, present perfect, present perfect continuous, past perfect, past perfect continuous, simple future, future continuous, future perfect and future perfect continuous.

The simple present tense in the affirmative has the same form as the infinitive but adds an –s for the third person singular. The simple present tense is used when the action is general, for statements that are always true, and when the action happens all the time or habitually.

The present continuous tense is used to express the idea that something is happening now. It can also be used to show that something is not happening now.

The past simple tense expresses the idea that an action started and finished at a specific time in the past.

The past continuous tense is used to indicate that a longer action in the past was interrupted. The interruption is usually a shorter action in the simple past.

The present perfect tense is used to say that an action happened at an unspecified time before now. Present perfect can be used with non-specific expressions such as: ever, never, once, before, already, etc. On the other hand, present perfect cannot be used with specific time expressions such as: yesterday, one year ago, last week, etc.

The present perfect continuous tense is used to show that something started in the past and has continued up until now.

The past perfect tense expresses the idea that something occurred before another action in the past.

The past perfect continuous tense is used to show that something started in the past and continued up until another time in the past.

The simple future tense has two different forms: *will* and *be going to*. *Will* is used to express a voluntary action and to express a promise. *Will* and *be going to* express a prediction. *Be going to* is used to express a plan.

The future continuous tense is used to express an interrupted action in the future.

The future perfect tense expresses the idea that something will occur before another action in the future.

The majority of sentences in the first report are in the present simple tense, present continuous tense, present perfect tense, and future tense. The past simple tense also appears in the report, but is not as plentiful as the previous tenses. The reason why authors use present and future tenses is because this topic concerning the problem of water is current, and will also most likely be in the future. The text of the report also contains some modal verbs such as may, must, can, shall, and need.

Almost the same situation is in the second report as is in the first report. The tenses which are most frequent in the second report are the present simple tense, present continuous tense, present perfect tense, present perfect continuous tense, and future tense. Past tenses are also used in the report, but only in the parts where the author describes events which happened in the past. Unlike the previous analytical report, the author of

this report used a lot of modal verbs in the text, especially in parts of recommendations. The most common modal verbs used in the text are should (shall) and could (can).

In the third report the most frequent tenses are the simple present tense and the present perfect tense. However, there are also many sentences which are in the past simple tense, some sentences which are in the present continuous tense, and also one sentence which is in the past perfect tense. The text of this report also contains some modal verbs, such as might, would, and can.

4.3 Phrasal Verbs and Idiomatic Expressions

Phrasal verbs are a combination of a verb and a preposition, a verb and an adverb, or it can be both a verb and a preposition plus an adverb. Phrasal verbs often have a different meaning to the original verb. Phrasal verbs are usually very informal, and they are used in everyday speech. Phrasal verbs are either transitive (they take an object), or intransitive (they do not take an object).

Idiomatic expressions are expressions that have a figurative meaning, and mean something other than the literal meanings of the individual words. As well as phrasal verbs, idiomatic expressions are most commonly used in a colloquial way.

The first report contains a minimum of phrasal verbs and no idiomatic expressions. The report contains some phrasal verbs, for example, *to point out = to indicate, to break down = to analyze in detail (in this text, but it has also another meanings).* The reason why there are almost no phrasal verbs and idiomatic expressions in the text is that they are usually used in everyday speech, and the usage of these verbs is not very formal, whereas the report is a formal text.

The second report contains more phrasal verbs than the first report, and it also contains one idiomatic expression. The phrasal verbs used in the second report are, for example, *to scale up = to increase, to build up = to increase (in this text, but it also has another meaning), to leverage sth up = to increase the amount of money borrowed, to spill over = when something has a wider impact on other people or situations (in this text, but it also has another meaning), to cut off = to isolate or make inaccessible, to move up = to move to a higher level (in this text, but it also has another meaning), to drive away = to force an animal or someone to leave a place, to drive down = to make a price or amount fall*

to a lower level. The only idiomatic expression used in text is *get to the heart of = find or determine the most important or essential facts or meanings.* The author used phrasal verbs and idiomatic expressions to make the text of the report more interesting.

The third report contains more phrasal verbs than the first report, but less than the second report. The phrasal verbs used in the third report are, for example, *to carry out = to perform a task (in this text, but it also has another meaning), to stand out = to be extraordinary and different, to put on = to deceive or lie (in this text, but it also has another meaning), to set out = to display or show (in this text, but it also has another meaning), to add up = to be a satisfactory explanation for something (in this text, but it also has another meaning).* This report does not contain any idiomatic expressions.

4.4 Active and Passive Voice

In a sentence using active voice, the subject of the sentence performs the action expressed in the verb. Active voice is used for most non-scientific writing. If the author uses the active voice for the majority of the sentences, it makes the meaning clearer for the readers, and keeps the sentences from becoming too complicated. Sentences in active voice are also more concise than those in passive voice, because fewer words are required to express actions in active voice than in passive voice.

In a sentence using passive voice, the subject is acted upon; he or she receives the action expressed by the verb. The agent performing the action may appear in a “by the...” phrase, or may be omitted. There are some reasons to generally avoid passive. For example, passive voice can create awkward sentences, or overuse of passive voice in an essay can cause the text to seem uninteresting. In writing business reports, however, passive voice is more readily accepted, since using it allows one to write without using personal pronouns or the names of particular researchers as the subject of sentences. This method helps create the appearance of an objective, fact-based discourse, because authors can present research and conclusions without attributing them to particular agents.

In all three analytical reports the authors used both - the active and the passive voice. If I were to determine which voice is more frequent in these reports, I would say passive voice, because as I have mentioned above, this method does not use personal pronouns or particular names, and the

text looks more fact-based and objective, and hence the passive voice is appropriate for writing analytical reports.

4.5 The Grammatical Person

The grammatical person shows the relationship between the speaker and other participants in an event. More specifically, it is a reference to a participant in an event, such as the speaker, the addressee (recipient of the speaker's communication), or others. The grammatical person usually defines the set of personal pronouns used by the speaker. It also frequently affects verbs, sometimes nouns, and possessive relationships as well.

Pronoun	Person	Plurality	Gender
I	First person	Singular	-
You	Second person	Singular/Plural	-
He	Third person	Singular	Masculine/Neutral
She	Third person	Singular	Feminine
It	Third person	Singular	Neutral
We	First person	Plural	-
They	Third person	Plural	-

- A table outlining personal pronouns and their grammatical persons

In the first and the second analytical report, the grammatical person changes, depending on what the authors are referring to. In particular parts there can be a different grammatical person. In the first report, when the authors refer to water, they use the third person singular. When they are referring to, for example, monitoring services, they use the third person plural. In the second report, when they are referring to Australia, they use the third person singular. When they are referring to, for example, dramatic changes, they use the third person plural. But these are the only two grammatical persons used in these reports. Other persons, such as first person singular/plural, second person singular/plural, are not used by the authors.

In the third report, the majority of grammatical persons are the third person singular/plural. When the author refers to, for example, tobacco, he uses the third person singular. If he refers to citizens, he uses the third person plural. However, in this report one sentence also appears in which the author uses the first person plural*: "We noted in the previous section that Romanian and British respondents are among the most positive about the effectiveness of health warnings on tobacco packs."*

4.6 Abbreviations and Acronyms

An abbreviation is a shortened form of a word or phrase. Usually it consists of a group of letters taken from the word or phrase. An abbreviation is pronounced as individual letters. For example *FBI* from *Federal Bureau of Investigation*.

An acronym is a word formed from the initial letters of the words in a phrase. Acronym is pronounced as a word. For example *laser* from *light amplified by stimulated emission of radiation*.

The first report contains several abbreviations. The authors, however, give the full definition with every abbreviation. For example *WHO = The World Health Organization, AUE = Association des Usagers de l'Eau.* This report also contains one acronym: *OFWAT = The Office of Water Services.*

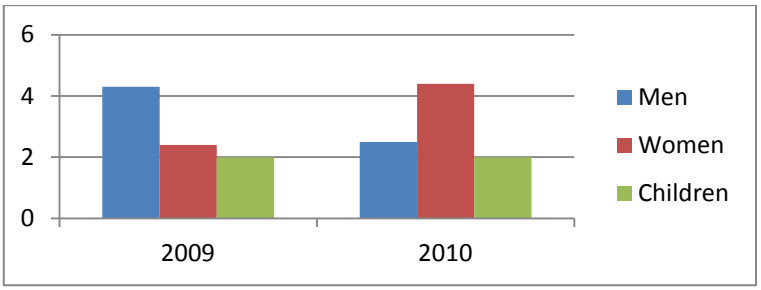
In the end of the second report is a glossary section. This section contains the list of abbreviations and acronyms used in the report, and their definitions. For example *ADB = Asian Development Bank, IBRD = International Bank for Reconstruction and Development, WTO = World Trade Organization* and acronym *AIDS = Acquired Immune Deficiency Syndrome.*

The third report contains a minimum of abbreviations and no acronyms. The total number of abbreviations used in this report is three, and these are *EU = European Union, ETS = Environmental Tobacco Smoke* and *EEA = European Economic Area.*

4.7 Visual Aids

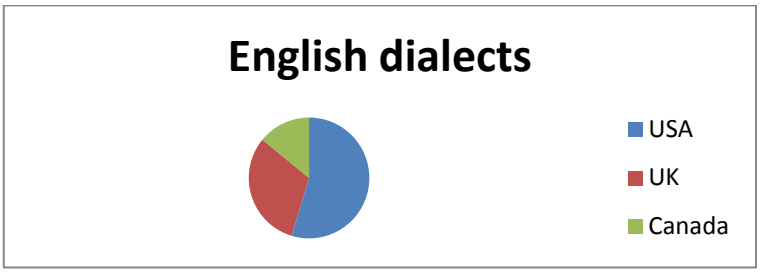
Visual aids can increase the effectiveness of business reports. Visual aids are used to emphasize, clarify, simplify, reinforce, and summarize information. They can also be used to add interest, improve credibility, and increase the coherence of the text. The most common visual aids are described below.

A bar chart is a chart that uses two or more rectangles, along with vertical and horizontal axes to represent information. Bar charts are used to compare discrete quantitative information. They provide a quick visual impression of the relationships between or among the components that are being compared.



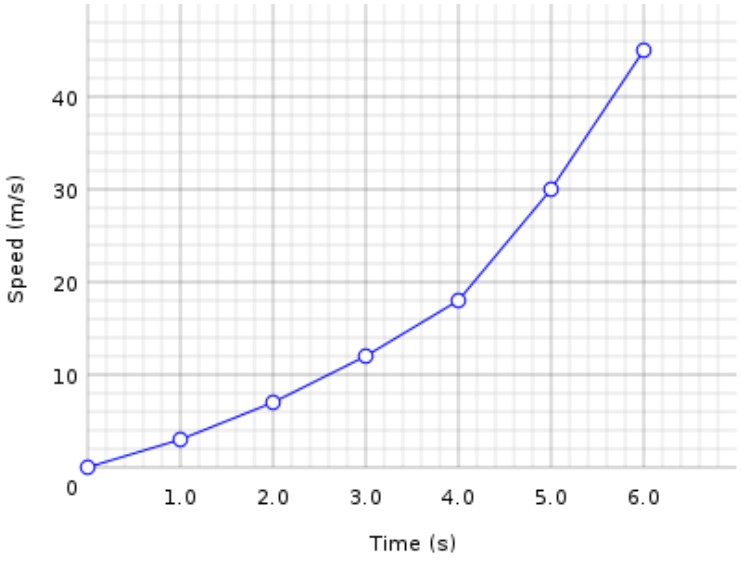
Example of a bar chart

Pie charts are circles divided into segments. The circle represents the whole amount (100 percent), and each segment represents a proportion of the whole. They are also called circle charts. They are effective when the author wants to emphasize relative proportions.



Example of a pie chart

Line charts display information as a series of data points connected by straight line segments. A line chart consists of a vertical axis, a horizontal axis, and one or more plotted lines. In a business report, one of the most commonly used line charts is a time chart, which shows trends or changes in a variable over time.



Example of a line chart

The pictures in the report emphasize the problem of the report more effectively than just a written text. Pictures also create a sense of precision, and they make a report more attractive.

The first report contains some pictures, bar charts, line charts, and pie charts. Pictures used in this report make the report more attractive, and emphasize the problem with water, because every picture is connected with the subject of water. The charts have an appropriate proportion according to the length of the text.

The second report has only two charts, and does not have any pictures.

The third report contains many charts, such as bar charts, line charts, and pie charts. In the text of this report many numbers expressing percentage appear, and therefore usage of these charts complement the content of this report in an appropriate way. Nevertheless, this report does not contain any pictures.

4.8 Questionnaire

The questionnaire contains 16 questions. These questions were created based on the theoretical part, and were answered by the representative of the company PWC. The summary of the answers is that - PWC provides analytical reports as a part of a complex service to various clients, and analytical reports are a fundamental part of their advisory and assurance solutions. The main differences in analytical reports between today and 10 years ago are recognizable in the increased usage of digital and online media (PowerPoint presentations, web pages, interactive content, etc.) and respectively in the decreased amount of hard copies. PWC find analytical reports useful for the clients, government, public institutions, as well as for the company itself. The number of people who prepare analytical reports in PWC is based on the scope, size, and difficulty of the individual project. Publicly disclosed reports are available on their web pages. Some reports are published annually, or with regular frequency. PWC mostly use their internal sources (surveys, databases, networking, knowledge base) for writing analytical reports. Analytical reports which also contain recommendations are standard in advisory and assurance related reports. PWC submits reports both in writing and digitally. The number of pages is based on the scope, size, and difficulty of the individual project. They use both, indirect and direct structures, but for different types of reports. Public reports are written in an indirect structure. Client reports are written in a direct structure. They use all formats of reports I mentioned in the questionnaire (letter format, memo format, manuscript format, digital format, printed forms) and also all delivery methods (in person, by mail, by fax, by e-mail, online). PWC use standardized templates and styles for writing analytical reports. PWC also

has a special person who deals exclusively with analytical reports, and is a methodology specialist. They use all three types of analytical reports (Justification/Recommendation reports, Feasibility reports, and Yardstick reports) but it depends on the client’s requirements.

5 CONCLUSION

To conclude my Bachelor thesis, I would like to make a brief summary of what was done and examined.

Firstly, it was necessary to give a theoretical framework to the whole thesis so I used several sources. As a result, you read a complex description of essential information of business reports, especially analytical reports as well as examined areas.

The theoretical part talks about analytical reports, their types, features, how to select the topic of analytical reports, which parts should standard analytical report contain and which writing style should the author of analytical report use. Further there is defined business environment and organizational strategies.

Concerning the practical part, three analytical reports were analysed in this thesis from three different viewpoints, which are as follows: the style, language and lexis. Getting these reports for using them in writing this bachelor thesis has been of extreme difficulty because the companies, which had been contacted, were reluctant to provide any or if at all confidential data concerning their clients. This part also contains summary of the answers from questionnaire. These questions were answered by a representative of the company PWC. This company was the only company which provided me analyzed reports.

The analysis of these reports was supposed to serve the author mainly as a way to compare how much the companies keep the formal layout, what is the level of English language used in these reports and how frequent do the authors of these reports use visual aids. I did not have any major difficulties while analyzing these reports. Each of these reports is formal and has high level of English language. The main difference is in using visual aids. The first and, especially, the third report contain, concerning the length of the report, many visual aids. On the other hand, the second report does not contain many visual aids.

The reason why analytical reports are prevalent in today´s business environment is that almost all companies and organizations use these reports not only to get the information about the problems, but also to get the recommendations how to solve them.

Elaboration of this bachelor thesis helped me to widen my knowledge of business reports in general as well as one particular area – analytical

reports and I look forward to writing an analytical report for a company myself in the near future.

6 ENDNOTES

[1] Kuiper, Shirley. *Contemporary Business Report Writing,* page **3**

[2] Kuiper, Shirley. *Contemporary Business Report Writing,* page **6**

[3] Guffey, Mary Ellen and Loewy, Dana. *Essentials of Business Communication,* page **234**

[4] Guffey, Mary Ellen and Loewy, Dana. *Essentials of Business Communication,* page **233**

[5] Guffey, Mary Ellen et al. *Business Communication: Process and Product,* page **372**

[6] Guffey, Mary Ellen et al. *Business Communication: Process and Product,* page **377**

[7] Guffey, Mary Ellen et al. *Business Communication: Process and Product,* page **377**

[8] Kuiper, Shirley. *Contemporary Business Report Writing,* page **275**

[9] Kuiper, Shirley. *Contemporary Business Report Writing,* page **394**

[10] Kuiper, Shirley. *Contemporary Business Report Writing,* page **395**

[11] Kuiper, Shirley. *Contemporary Business Report Writing,* page **398**

[12] Kuiper, Shirley. *Contemporary Business Report Writing,* page **400**

[13] Kuiper, Shirley. *Contemporary Business Report Writing,* page **402**

[14] Guffey, Mary Ellen and Loewy, Dana. *Essentials of Business Communication,* page **32**

[15] Guffey, Mary Ellen and Loewy, Dana. *Essentials of Business Communication,* page **42**

[16] Britton, Chris and Worthington, Ian. *The Business Environment,* page **34**

[17] Britton, Chris and Worthington, Ian. *The Business Environment,* page **35**

[18] Britton, Chris and Worthington, Ian. *The Business Environment,* page **45-51**

[19] Britton, Chris and Worthington, Ian. *The Business Environment,* page **57**

7 BIBLIOGRAPHY

Print sources

Guffey, Mary Ellen and Loewy, Dana. *Essentials of Business Communication*. 8th ed. Masson : Cengage Learning, 2010. 558 p. ISBN 978-0-324-58800-9

Guffey, Mary Ellen et al. *Business Communication: Process and Product*. 6th ed. Cengage Learning, 2008. 643 p. ISBN 978-0-324-54290-5

Kuiper, Shirley. *Contemporary Business Report Writing*. 4th ed. Cengage Learning, 2009. 560 p. ISBN 978-0-324-58742-5

Britton, Chris and Worthington, Ian. *The Business Environment.* 5th ed. Pearson Education, 2006. 554 p. ISBN 978-0-273-70424-9

Ashley, A., *Oxford Handbook of Commercial Correspondence.* Oxford University Press, 2003. 304 p. ISBN 978-0-19-457213-2

Summers, Della, *Longman Dictionary of Contemporary English.* Longman, 2003. 1949 p. ISBN 0-582-50664-6

8 ABSTRACT

The aim of this bachelor thesis was to focus on a business case first from the theoretical perspective and after analyze a real business case. The theoretical part contains essential information concerning analytical reports. Theoretical part may also help some beginners with planning and writing analytical reports. The practical part is focusing on analysing real analytical reports such as evaluation of the style, language and lexis. The practical part also contains questionnaire and answers from a consulting company which participated in creating this thesis.

9 RESUMÉ

Tato bakalářská práce se věnuje analytickým zprávám a to jak z hlediska teoretického tak i praktického. Teoretická část obsahuje základní informace o analytických zprávách a může sloužit také jako příručka pro psaní analytických zpráv pro začátečníky. V praktické části je důraz kladen na rozbor skutečných analytických zpráv z hlediska stylistického, jazykového a lexikálního. Praktická část také obsahuje dotazník s odpověďmi, které poskytla poradenská firma, která se podílela na tvorbě této práce.

10 APPENDICES

Appendix 1

QUESTIONNAIRE

1. Why do you use analytical reports?
2. Is there any difference in analytical reports between today and before 10 years?
3. Do you find analytical reports useful for your company?
4. How many people work on the analytical reports?
5. How often does your company present analytical reports? (once a month, every quarter,..)
6. Where you are looking for sources of information for analytical reports?
7. Do you also supply recommendations in analytical reports?
8. Do you submit reports in writing, orally or digitally?
9. Do you use a PowerPoint presentation?
10. How many pages have usual reports?
11. Do you use direct or indirect structure during writing reports?
12. Which format of reports do you use? (letter format, memo format, manuscript format, digital format, printed forms)
13. Which way of delivery do you use? (in person, by mail, by fax, by email, online)
14. Do you use some templates for writing analytical reports?
15. Does PWC has a special person which deals exclusively with analytical reports?
16. Which one of these types of analytical reports is most common in your company-Justification/Recommendation reports, Feasibility reports or Yardstick reports?

Appendix 2

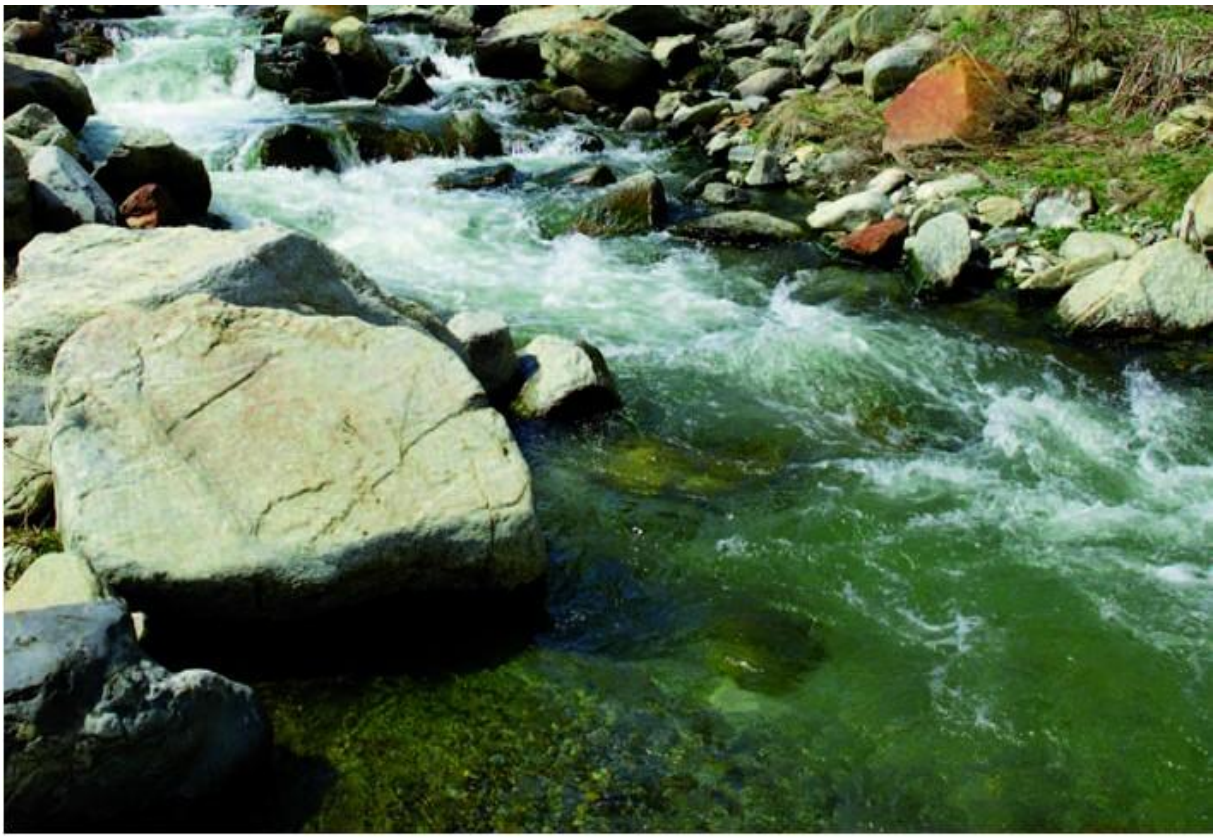
Water: challenges, drivers and solutions

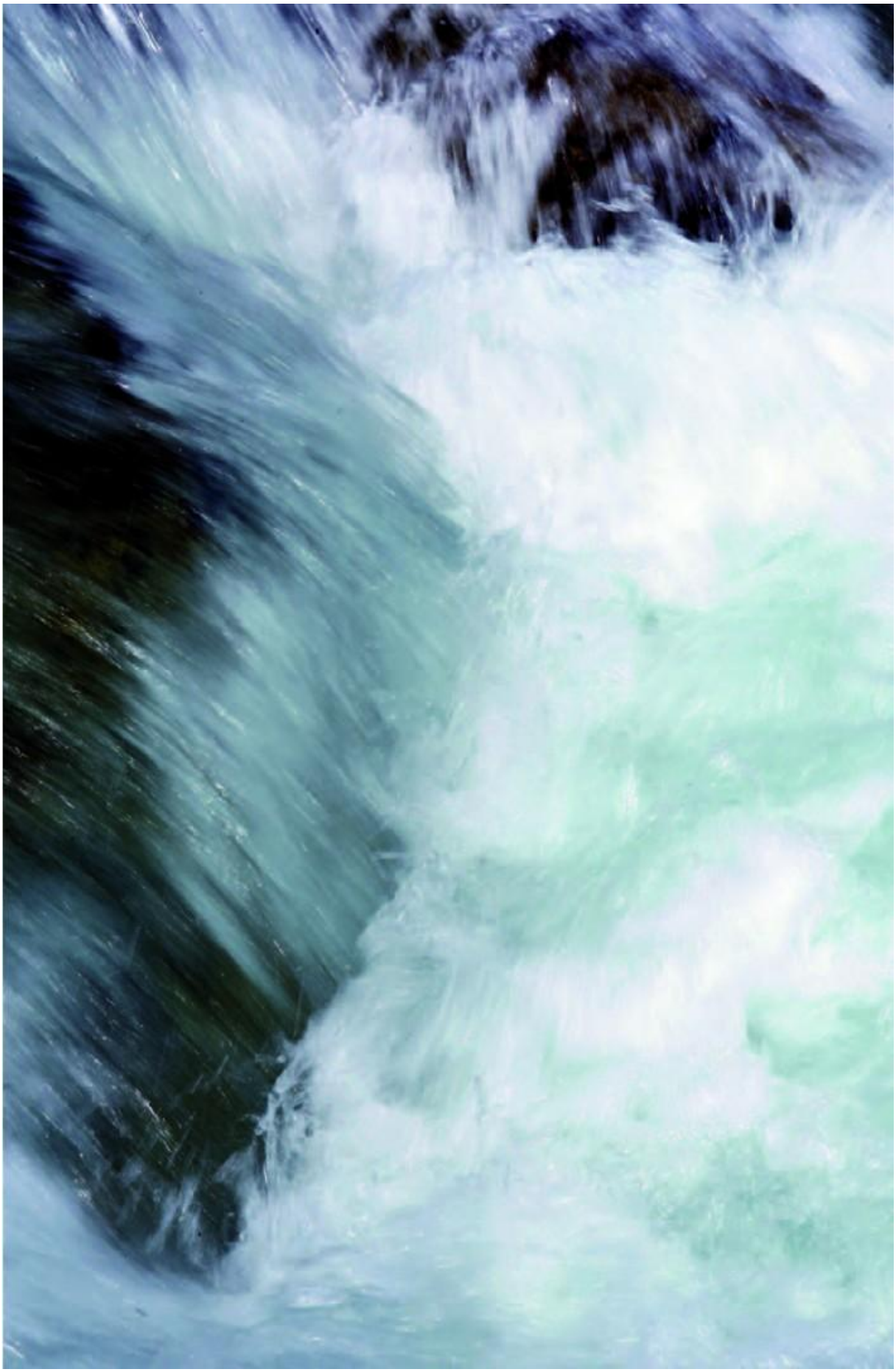
March 2012

pwc

Contents

Table of figures





Introduction

Water has become one of the foremost modern-day challenges in this early part of the third millennium. This is because one of the targets of the Millennium Development Goals is to halve the proportion of the population without sustainable access to safe drinking water between 2000 and 2015 and subsequently achieve universal coverage. Another reason is that the era of free drinking water in unlimited quantity is over. During recent decades, a combination of human demographics and human activity has in many global regions transformed water from an abundant element to a scarce resource.

The automatic response to perceived resource scarcity is typically conditioned by economics and the principal aim then becomes the optimal management of the resource in question. However, water is essential to the existence of human beings and of all our planet's flora and fauna. This means that it is not just an economic good; it is also a social and environmental good. Although water quantity on Earth has been stable for millions of years, water quality has deteriorated considerably. Climatic changes, whether temporary or lasting, are another complicating factor: some parts of the globe are facing an increased risk of flooding even as others are at risk of severe drought.

Water management has consequently become both difficult and complex. The difficulty lies in providing access to drinking water for a global population that has risen from 1.5 billion at the beginning of the 20th century to 7 billion today. The complexity comes from the multifarious aspects of water management, beginning with technical, institutional and organisational issues, the application of new technologies, legal and regulatory considerations and regulatory effectiveness. Other aspects are standards, investment, costs, financing, pricing, governance, and economic, financial, social and environmental sustainability. Admittedly, the digital revolution has made itself felt, but the impact on the sector has remained modest. Since Antiquity, man has had to keep building pipe networks and aqueducts to channel water; unlike information, millions of cubic metres of water cannot be transferred from one place to another with a mere click.

Today, the issue of water is inseparable from that of the sanitation facilities needed for the treatment of wastewater prior to its discharge back into the environment. The challenge here is no less formidable than that concerning drinking water. Water is essential to life and public health, and sanitation is essential to human dignity, the environment and - ultimately - water conservation.

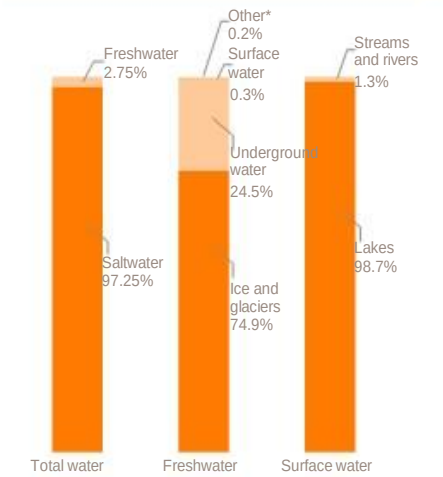
Thus, water-related issues, which up to several years ago interested only specialists and scientists, are now a central concern for many, including public and private operators, elected officials, associations and citizen-consumers. In less than 30 years, society has come to recognise that water management concerns us all, that it needs to be approached on a planetary scale and that negligence and ignorance with regard to water could lead to serious problems incompatible with human survival. All players in the water sector need to rally urgently to the task of finding holistic solutions for securing water supplies for existing and future generations.

Section I - Major challenges and stabilising factors for the water sector

1.1. An abundant source in stable quantities, but of limited accessibility

The Earth's water supply is - paradoxically - both abundant and scarce. The planet has more than 1,400 million km3 of water, of which 97.25% in the form of oceans and seas. However, freshwater represents just 2.75% of that volume or 39 million km3. In all, 75% of freshwater is trapped in glaciers, as well as in ice, and 24.5% is underground. Surface water, the sole truly usable source, represents only 13,500 km3 or one-hundred-thousandth of the planet's water [1].

Figure 1: Availability of water on Earth



* Other: Water present in the atmosphere and biosphere, and as moisture within the soil.

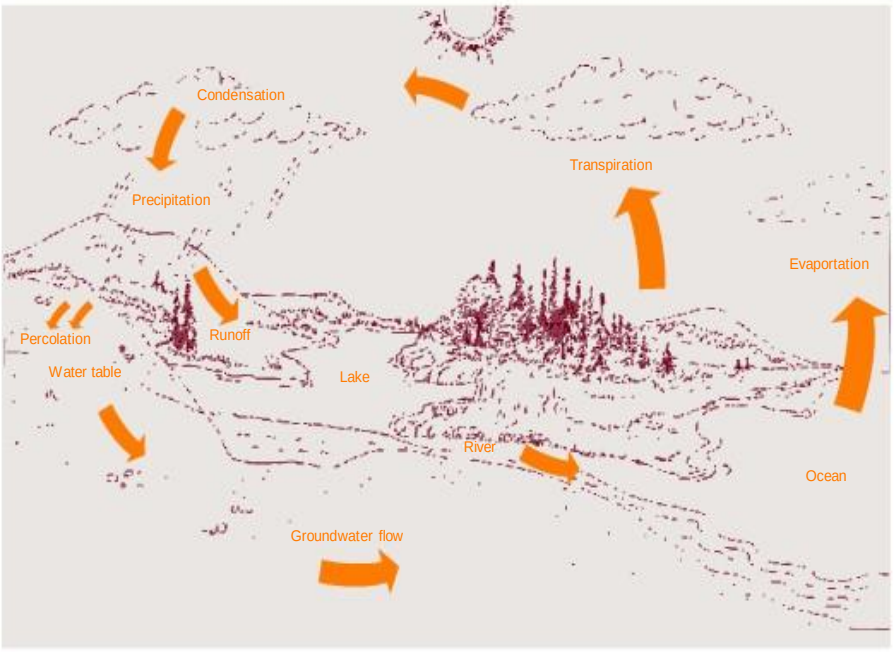
1. Pidwirny, Michael J. "The Hydrologic Cycle", Fundamentals of Physical Geography, 2nd Edition, 2006

The Earth's water is renewed through a cycle comprising evaporation, condensation and return to the source. The cycle for surface water averages less than 21 days, with nine days for condensation/precipitation and 12 days for the return of rainwater to the sea. Sixty percent of rainwater evaporates in the atmosphere, 25% infiltrates the soil and 15% finds its way into lakes and rivers. The cycle for infiltration water varies depending on the groundwater aquifers.

As we have seen, the Earth's water supply is abundant in absolute volume terms. However, only a very small portion of it is available for human requirements. The renewal of visible (surface) water takes place over a nearly month-long cycle.

The length of the renewal cycle depends on the nature of the water. The renewal cycle for atmospheric water is eight days, that for streams and rivers is 10 days to 20 days, that for lakes is 20 years and that for underground water and oceans is in excess of 1,000 years.

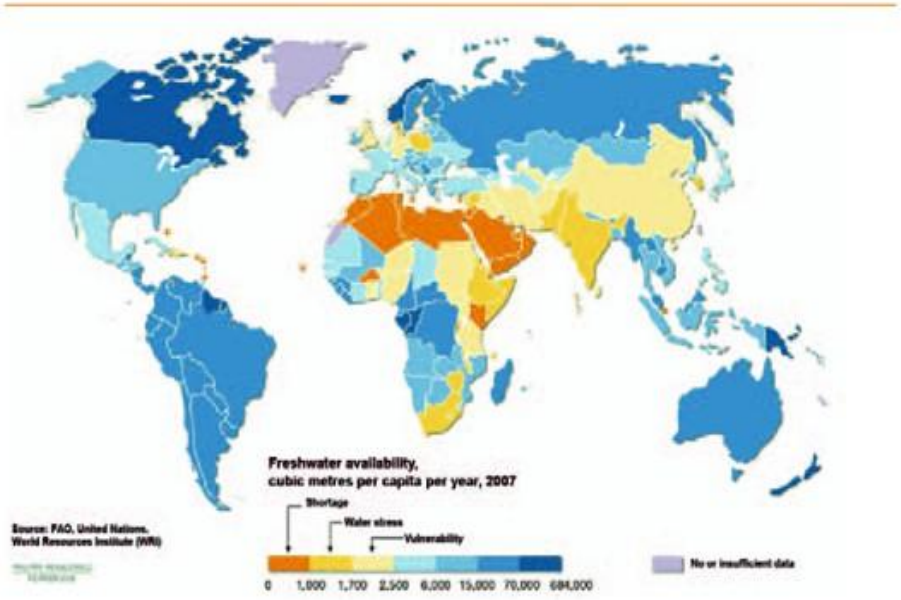
Figure 2: The water cycle



1.2. Marked geographical disparities further impact water availability

The availability of water is determined by geographical location and climate. There are desert areas (for example, the Sahara region and the Middle East), regions with medium to high rainfall (for example, some parts of South America, of Sub-Saharan Africa and of tropical and equatorial Asia) and places with a high density of water in the form of ice (for example, Canada, northern Siberia and the North Pole). At present, 85% of the world's inhabitants live in the more arid half of the Earth [2].

Figure 3: Freshwater availability and water stress, 2007



In 2007, several world regions were clearly in a vulnerable situation or affected by water stress. A number of regions, including Saharan Africa, Southern Africa, the Middle East, central Asia, central India and some parts of China, were already experiencing waters shortages.

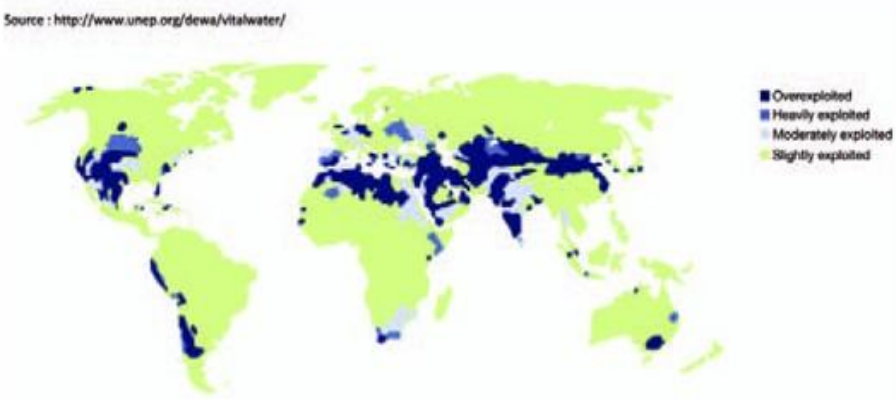
Water stress means that the supply of available and accessible water is not sufficient, or will cease to be sufficient in the near future, to meet the needs of users.

The pressure on water resources is already evident. In some parts of the world, demand for water exceeds the quantity available or produced within regional frontiers. In 2000, a total of 508 million people in 38 countries were affected by water stress. By 2025, 3 billion people in 48 countries could be in the same situation.

Depending on the available water supply, needs are met through the exploitation of resources, which may be renewable to a very limited extent or not renewable at all. The Water Exploitation Index (WEI), the reference index used by the United Nations, measures the ratio between annual total freshwater withdrawal and the long-term annual average of renewable freshwater resources. The index shows that regions with a severe water deficit are those where over-exploitation of resources and reserves is most acute [3]. Such cases include countries in North Africa, the Near East and the Middle East, and some parts of Southern Europe and Asia. The same situation applies in a number of highly industrialised countries, such as the United States, where the extent of water demand is causing reserve depletion at a faster-than-normal rate.

2. OECD, OECD Environmental Outlook to 2030
3. UNDP Human Development Report 2006

Figure 4: Exploitation of water reserves worldwide



The corollary to this situation is that the regions where water resources are the least exploited are those where access to water is least developed. Access to water is assessed relative to population density. In French-speaking North Africa, for example, more than 80% of inhabitants have access to water. However, the water comes from reserves that are overexploited.

Aside from the availability of freshwater and "theoretical" access to water, there are the equally important matters of water supply and sanitation.

1.2.1. Water supply

The World Health Organisation (WHO) assesses drinking-water supply based on the type and quality of access made available to people. The organisation recognises three types of drinking-water access - piped water on premises, other improved drinking-water sources and unimproved drinking-water sources.

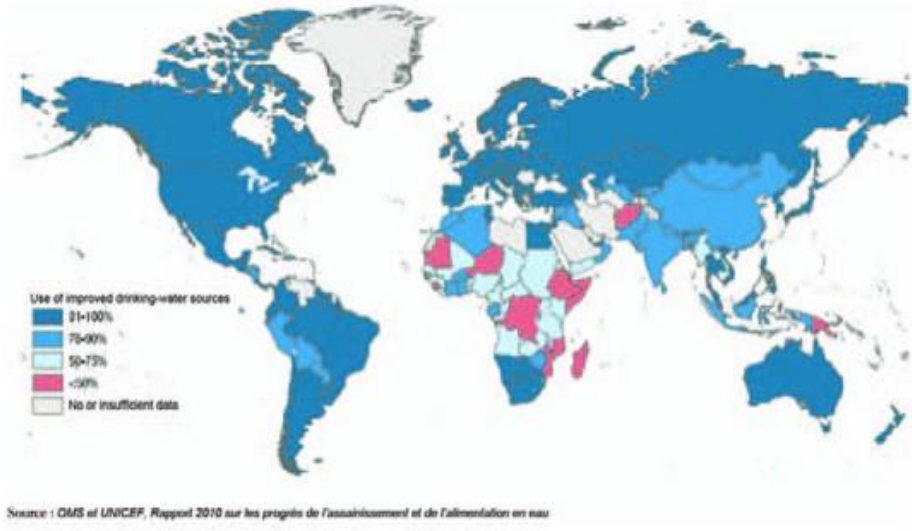
Table 1: The WHO and Unicef drinking water ladder

Piped water on premises	Piped household water connection located inside the user's dwelling, plot or yard.
Other improved drinking-water sources	Public standpipes, tube wells or boreholes, protected dug wells, protected springs and rainwater collection.
Unimproved drinking-water sources	Unprotected dug wells, unprotected springs, carts with small tank/drum, surface water (river, dam, lake, pond, stream, canal or irrigation channels), and bottled water.

In 2008, 57% of the world's population had access to an improved source of drinking water (piped water connection in the user's dwelling, plot or yard, or to water sources), 30% used other improved drinking-water sources (public taps or standpipes, tube wells, boreholes, protected springs and rainwater collection) and the remaining 13% relied on unimproved sources (unprotected dug wells, unprotected springs, surface water or irrigation channels) [4].

4. WHO and Unicef, 2010 Update Report on Progress on Sanitation and Drinking Water

Figure 5: Global and regional trends in water supply in 2008



Source : OMS et UNICEF, Rapport 2010 sur les progrès de l'assainissement et de l'alimentation en eau

Thanks to the spread of piped household connections, several world regions experienced a strong improvement in water access between 1990 and 2008. Such regions include eastern Asia (use of improved water sources by 83% of the population in 2008 versus 55% in 1990) and North Africa (80% in 2008 versus 58% in 1990). Direct access to water is available to 33% of the population in Southeast Asia, 23% in South Asia and 16% in Sub-Saharan Africa. However, between 44% and 53% of those three regions' inhabitants still use water obtained from public standpipes, wells, boreholes, protected springs or rainwater collection.

Urban areas enjoy better water-supply coverage. In 2008, 96% of the global urban population had access to improved drinking-water sources versus 78% in rural areas. In developed regions, the rural and urban water access rates are currently 98% and 100% respectively versus 76% and 94% in developing regions. In Sub-Saharan Africa, 47% of the rural population uses improved drinking-water sources versus 83% in urban areas. In all, 84% of the 884 million inhabitants in the world without access to an improved drinking-water source live in rural areas.

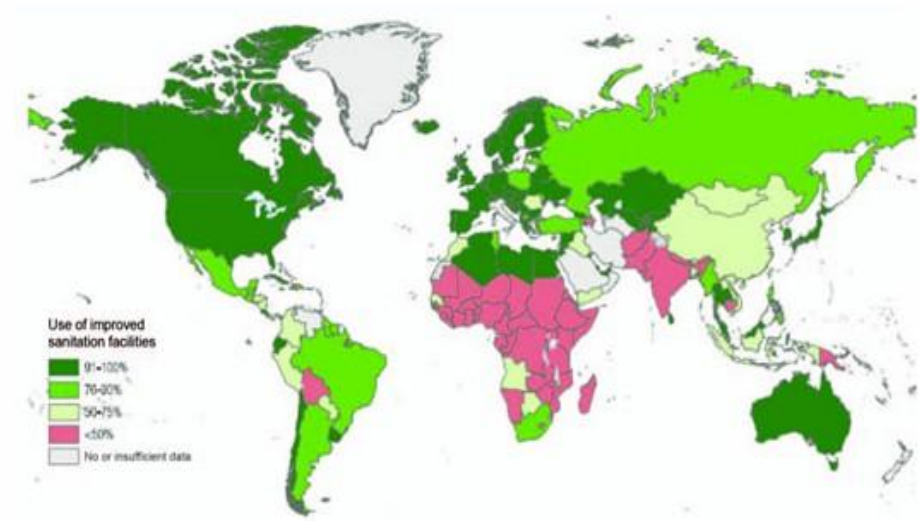
It must be pointed out that the figure of 884 million people without access to safe drinking water is widely contested. Critics believe it to be a considerable underestimation on the grounds that it only takes account of persons who use water that has been contaminated by animal faeces deemed dangerous to human health. There are, indeed, many other cases around the world of people not having access to drinking water. The AquaFed [5] international federation of private water operators has found that access to an "improved" source of drinking water, i.e., water obtained from a tap in the home or nearby, or from other "improved" sources, is not always the same as access to safe drinking water. Based on related estimations and extrapolations, 1.9 billion people only have access to unsafe water (it contains, for example, arsenic, coliforms, or chemical, physical or biological contaminants) and 1.6 billion people have access to water of doubtful quality. On that premise, only 3.5 billion people have access to water that is safe, meaning that two conditions for virtually-assured safety are met: (i) the chemical and biological quality of the water is appropriately verified; and (ii) precautions are taken to ensure that no contamination occurs during the transfer of the water from the source to the place of use, not least of all, the home. Based on that definition of water safety, roughly 50% of the global population uses water of dangerous or doubtful quality.

5. Les besoins en eau potable dans le monde sont sous-estimés : des milliards de personnes sont concernées, Gérard Payen, President of AquaFed, November 2011

1.2.2. Sanitation

The situation with regard to sanitation is even more serious. The WHO recognises four types of access to sanitation: improved facilities, shared facilities, unimproved facilities and open defecation.

Figure 6: Global and regional trends in sanitation practices in 2008



Source : OMS et UNICEF, Rapport 2010 sur les progrès de l'assainissement et de l'alimentation en eau

Sub-Saharan Africa and South Asia remain the regions with the lowest use of improved sanitation facilities. Between 1990 and 2008, progress in the sphere of sanitation in those regions was slower than in other developing regions.

Sanitation facilities are better in urban areas. In 2008, 76% of the global urban population had access to improved sanitation facilities versus just 45% in rural areas. In developed regions, the rural and urban access rates are currently 96% and 100% respectively versus 40% and 68% in developing regions. Sub-Saharan Africa and South Asia are trailing behind, with respectively 76% and 74% of rural dwellers having no access to improved sanitation facilities.

According to the WHO, by 2015, 2.4 billion people will not have access to basic sanitation and close to 4 billion people will not have access to shared sanitation facilities.[6] Rural dwellers are expected to account for 70% of people without access to improved sanitation facilities. This increases the appeal of migrating to urban areas and explains the steady demand growth in towns and cities. In Asia, the nearly 60% projected surge in the urban population by 2025 is likely to create water shortages. [7]

Alongside localised water stress resulting from the demand-supply imbalance is the issue of water quality at both ends of the supply chain.

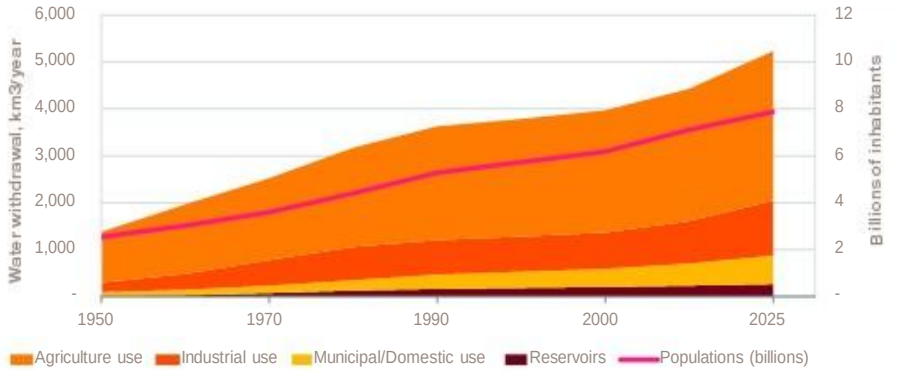
6. WHO and Unicef, 2008 Update Report on Progress on Sanitation and Drinking Water
7. Asian River Restoration Network and the fresh and coastal waters session, 2007

1.3. Dwindling of resources of good-quality water owing to major structural factors

1.3.1. Demographic and urbanisation growth mechanically increases demand for domestic water

During the 20th century, water withdrawal worldwide rose sevenfold and projections through to 2025 are consistent with that trend. Water withdrawal exceeded the 4,000 km3 mark in 2000 and will top 5,000 km3 in 2025. The 80 million-strong growth in the human population each year has an impact of nearly 64 km3 on annual freshwater demand.

Figure 7: Change in water withdrawal and the global population, 1950-2025 [8]



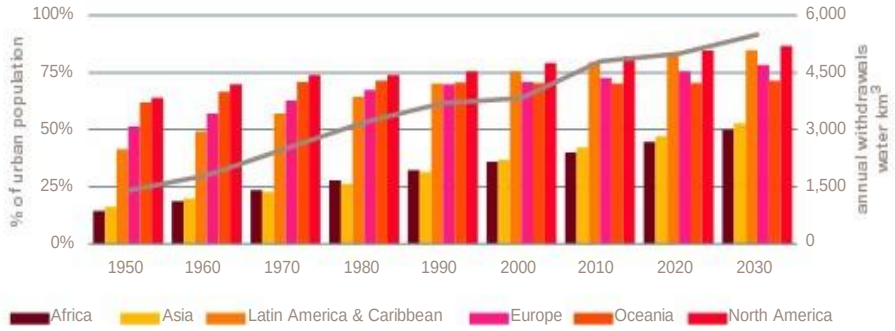
**Loss of reserves: reduction in water through pollution or a decline in the quality of reserves.*

An estimated 90% of the 2 billion people who are expected to be added to the worldwide population by 2050 will live in developing countries. Many of them will live in regions already experiencing water stress or without sustainable access to drinking water and adequate sanitation. Water volume requirements will be exacerbated by the population's greater life expectancy.

Coastal and urban areas will be the first to be affected by massive migration. By 2030, nearly 60% of the global population will live in towns and cities and 81% of urban humanity will live in vulnerable and developing regions.

8. FAO 2010, UN Water 2009, World Bank 2008

Figure 8: Trends in urban population density and water consumption, 1950-2030 [9]



In 2010, water withdrawal for domestic use was estimated by the United Nations at 472 km3 or 11% of total water withdrawal worldwide. It is used to supply towns, cities and rural communities. Withdrawal should be 30% higher by 2025. The water is used for drinking, hygiene and various domestic purposes. [10]

1.3.2. Production of water-intensive foodstuffs is on a rising trend

Food security is an imperative and is inextricably linked to the availability of water resources. Agriculture has traditionally accounted for the bulk of worldwide water consumption, representing 70% of water withdrawal on average. Agricultural production has increased in line with global demographic growth. The FAO expects demand for food to remain on a rising trend in response to demographic and income growth. Demand for cereals (for human and animal consumption) should reach 3 billion tonnes in 2050. Annual cereal output will need to increase by nearly 1 billion tonnes from 2.1 billion tonnes today. Annual meat production will need to rise by more than 200 million tonnes to 470 million tonnes in 2050, with consumption in developing countries representing 72% versus 58% at present. According to the FAO, water withdrawal for agricultural irrigation is likely to increase at a nearly 11% annual pace to 2,906 km3 by 2050 on the back of more efficient water use and improved crop yields. [11]

Geographical and rainfall disparities, together with the quest for productivity gains, have led to the increased use of irrigation. Irrigated land increased fivefold during the 20th century. In addition, certain emerging and developing countries (for example, Côte d'Ivoire, Brazil and Morocco) increase production in order to raise export levels. According to the FAO, rainfed agriculture covers 80% of arable land and contributes 60% of food production, whereas irrigated agriculture covers 20% of arable land and contributes 40% of food production. Water consumption varies depending on foodstuffs: 1,500 litres of water for 1 kg of wheat, triple that amount for on average 1 kg of rice, 4,300 litres for 1 kg of poultry and 15,400 litres for 1 kg of beef [12]. In 2010, the United Nations estimated that water withdrawal and consumption (respectively 3,189 km3 and 2,252 km3 at the time) would need to rise by 13% by 2025 to meet the food requirements of a global population with an additional 764 million people.

9. UN Water, FAO Aquastat 2010, World Urbanization Prospects, FAO, PwC Analysis
10. http://webworld.unesco.org/water/ihp/db/shiklomanov/part'3/HTML/Tb_18.html
11. FAO, How to Feed the World in 2050, 2009
12. UNESCO - IHE: http://www.waterfootprint.org (5 October 2007)

1.3.3. Industrial requirements weigh more and more heavily in the balance

In 2000, water withdrawal for industrial and energy purposes taken together was 776 km3 or 19% of total water withdrawal [13]. In 2010, industry- and energy-related water withdrawal exceeded 900 km3 and is expected to grow by nearly 30% by 2025. Industrial demand, initially powered by the industrialisation of the world's old economies, is experiencing a resurgence as emerging and developing countries gradually close the gap. This is because water is vital to industries like hydropower, metallurgy, mining and paper.

The production of nuclear energy and hydropower accounts for 57% of industry-related water withdrawal versus 40% for industrial processes and 3% for thermal power generation.

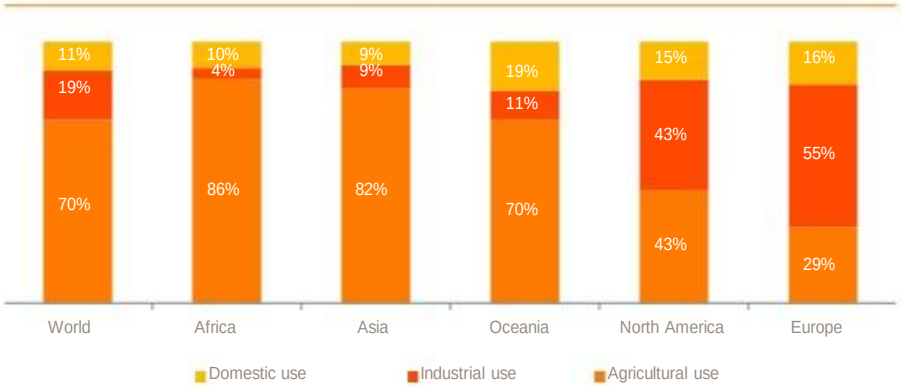
1.3.4. Urbanisation is keeping domestic use on an upward trend

Domestic use represents on average 11% of total water withdrawal worldwide and is used to supply towns, cities and rural communities. Withdrawal should be 33% above the current level of roughly 487 km3 by 2025. The water is used for drinking, hygiene and various domestic purposes. Note that only 1.5% of drinking water is effectively used for drinking purposes.

1.3.5. The situation varies across continents and regions, reflecting differing realities

The use of withdrawn water varies across world regions and is conditioned by each region's degree of development. In the long-industrialised countries, water withdrawal for industrial purposes is at least equal to water withdrawal for use in agriculture. In emerging and transitional economies, agriculture remains the biggest water consumer.

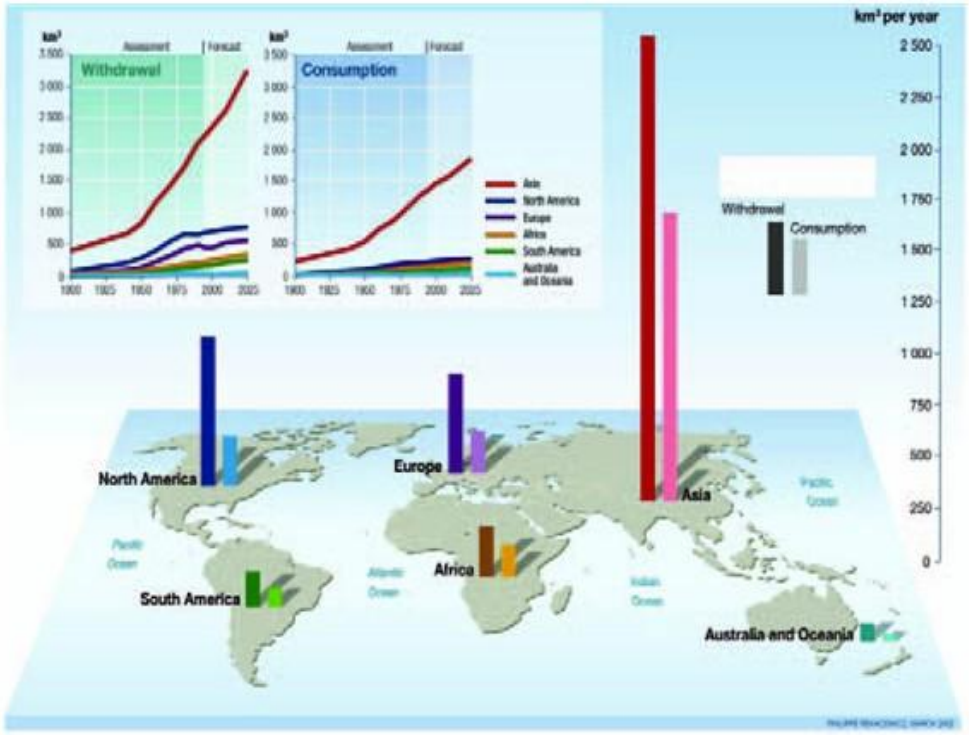
Figure 9: Use of withdrawn water by region, 2003 [14]



13. FAO Aquastat 2010
14. FAO - Aquastat. - www.fao.org/nr/water/aquastat (November 2010)

Volumes of consumed and withdrawn water also vary markedly across regions. In 2010, the Asian continent was by far the largest contributor to worldwide water consumption and withdrawal, accounting for 66% and 59% respectively. Next in line were Europe and North America. Developing regions, excluding Asia, were the smallest consumers.

Figure 10: Water withdrawal and consumption by region, 2010 [15]



Source : http://www.unep.org/dewa/vitalwater/article42.html

15. State Hydrological Institute (St. Petersburg, Russia) edited by I. Shiklomanov

1.4. Human activity is accelerating the deterioration in the Earth's water capital

For centuries, a very large portion of natural freshwater could be used directly for human purposes without special treatment. However, the second half of the 20th century was marked by the large-scale deterioration and change in the water renewal cycle.

Human activity is the root cause of this situation.

In agriculture: the massive use of pesticides, herbicides and nitrogenous fertilisers has grave consequences for groundwater layers. The pollution process is slow and the effect on water resources is long-lived. At the same time, surface water is polluted by waste discharges from livestock farms.

In industry: waste containing over 100,000 chemical components is discharged into waterways. Eutrophication, a process resulting from a high concentration of nutrients (mainly phosphorus and nitrogen), significantly reduces the suitability of water for use. Another contributing factor is the increased transfer of very polluting industries from high-income countries to emerging market economies, which are less well equipped to treat industrial waste and wastewater.

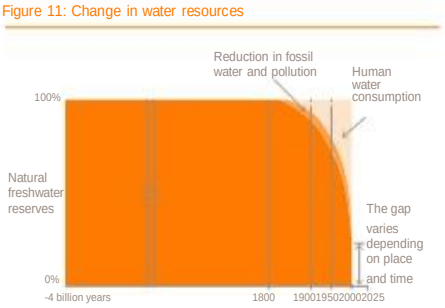
In urban areas: the natural runoff process is hindered by solid buildings. In addition, rainwater collects chemicals and other concentrated forms of pollutant (such as zinc and lead), which are then carried directly into streams and rivers. Rainwater is discharged with no prior treatment, especially in emerging and the least developed regions. In developing countries, more than 80% of wastewater is currently discharged into the environment in an untreated state, polluting rivers, lakes and coastal areas.

In 2010, less than 20% of drainage basins worldwide contained water of suitable quality.

The quantity of good-quality water is in substantial decline. Another dimension is added to the problem of water scarcity by the impact of climate change, which might undermine the "traditional" water cycle described earlier and, thereby, the stabilising factors underpinning the supply of water. Changes are already discernible: concentrated bursts of torrential rainfall, runoff incidents, flooding, droughts and other climatic events increased sharply during the second half of the 20th century, supporting the widely held perception of an intensification of extreme weather phenomena. Based on IPCC projections, the incidence of severe weather phenomena should remain on a rising trend through to 2050.

The growing use of natural freshwater reserves and the spread of pollution have caused a relentless decline in unpolluted freshwater resources since the middle of the 19th century, as shown in the chart below. [16]

Figure 11: Change in water resources



16. The "World Water Vision", presented by The World Water Council at the Second World Water Forum in The Hague in March 2000

Section II - Key players in the water sector value chain

In this section, we present the key players in the water value chain: operators, system designers/integrators, equipment manufacturers and regulators. The diverse profiles within each main player category reflect the enormous differences in local conditions (scope of operations, socio-economic service backdrop) and demand (type of customer, nature of services), which highlight the complexity of water issues around the world.

2.1. Differing situations and needs…

2.1.1. Socio-economic service backdrop

The socio-economic service backdrop is typically major city centres and peri-urban and rural areas, which pose distinct constraints for operators.

Urbain area

Water management priorities in urban areas are determined by the degree of development of the country concerned.

In developed countries, the provision of drinking water and sanitation in towns and cities is facilitated by the existence of infrastructure and networks. As such, priorities are mainly:

- network maintenance and upgrades: action required is largely determined by the continuity and quality of past maintenance. There is a relative increase in costs as a result of lower consumption and the oversized nature of networks;
- stringent water treatment and sanitation requirements. These requirements are established under national or international regulations aimed at ensuring health security for consumers by reference to public health priorities (for example, those enshrined for more than a century in France's 1902 law). Environmental protection is a more recent addition. The Water Framework Directive (European Union, 2000) and the New South Wales Water Management Act (Australia, 2000) both contain ambitious environmental objectives (which are cited by UNEP [17]).

Many emerging countries are experiencing massive urban expansion that is often disorderly and uncontrolled. Key players in the water sector are faced with inadequate - or a lack of - infrastructure, worsening water scarcity and the rapid deterioration of water quality. In this context, the main challenges are as follows:

- the renovation of networks or the creation of infrastructure from scratch, involving heavy investment;
- the overexploitation of groundwater sources (water withdrawal from increasingly deep or distant aquifers in quantities exceeding recharge rates), leading to a decline in the quality of the water withdrawn (saline intrusion), increased catchment/pumping costs and, over the longer term, the possible exhaustion of water resources;
- the concentration of pollution resulting from human residential and industrial activity, leading to risks to public health and the environment, and to the need for large-scale sanitation facilities.

Peri-urban and rural areas

Although different overall, peri-urban and rural areas may present a number of similarities from an operator standpoint. This is because in the water sector, the term "rural" is applied not only to villages, but also to small towns with up to tens of thousands of inhabitants. Key characteristics include:

- disorganised town planning (peri-urban areas) or low population density (rural areas), resulting in the need for heavy investment and high running costs. Operators face coverage- and efficiency-related challenges;
- a served population characterised by low incomes and relatively low consumption, with a potential impact on the operator's revenue streams;
- essential sanitation-related challenges, given that the service is at best limited to the collection of wastewater, without any subsequent treatment, or may even be non-existent.

These circumstances make it difficult for operators to keep providing a service over the long term. The conventional networks managed by operators remain the exception and therefore two main categories of drinking-water distribution systems prevail: (i) ancestral systems like manually-operated wells and boreholes that are traditionally managed by communities

17. The Greening of Water Law: Managing Freshwater Resources for People and the Environment, UNEP, 2010

(associations), but also increasingly (ii) small networks of private connections or standpipes that are managed by small private or public operators. Professionalisation and compliance with standards are critical considerations for these very small-scale providers, which are now offered technical and financial assistance services to help them address the difficulties encountered.

2.1.2. Scope of operations

Depending on the historical policy choices in the country concerned, water management may be conducted at the grassroots level (i.e., at the local-authority level, as in France, the United States and Germany), or at an intermediate level (as in Brazil and the United Kingdom), or at the national level with a single operator empowered to delegate the management of the service (as in Senegal and Morocco). In recent years, the trend has been towards the decentralisation of powers and responsibilities to local authorities, which are best acquainted with local realities in terms of the state of water resources and user expectations.

2.1.3. Services provided and users

Water consumption volumes are highly uneven across use categories, which are primarily agriculture (70% of water withdrawal), industry (19%) and domestic (11%). Agricultural use is excluded from this analysis of key players in the water value chain, as irrigation, although extremely water-intensive, is rarely a feature of conventional operator-based water distribution.

Industrial use

Services for industrial users comprise mainly the supply of process water (for surface treatment, electronic components, the agri-food industries and so forth) and the treatment of industrial wastewater. Demand is centred on both high-volume consumption (for example, by the cooling systems for energy-production units, refineries and chemical industries) and the quality of the water to be used. Many technological processes call for water of a precise quality, with water purity ensured through processes like ultra/micro/nanofiltration. Industrial requirements also involve wastewater treatment, which may be very complex - zero liquid discharge, treatment of the toxic compounds (mercury, arsenic and cyanide) present in mining wastewater by means of coagulation and flocculation, or biological treatment of agri-food wastewater. In addition, wastewater recycling and reuse have become key concerns for many water-intensive industries.

Domestic use

The two major services for domestic customers are the (i) distribution of drinking water and (ii) wastewater collection and treatment. The two services may be supplied by a single operator or may be split between several operators. Establishing a typology of water users is far from straightforward. However, broad country development stages (developed, emerging and developing) may be a useful starting point. Users' differing needs and income levels must also be factored into the equation. Another aspect is users' perception of the two major services provided, which may vary appreciably, especially across country categories.

In developed countries, expectations are demanding with regard to service quality for drinking water and sanitation. They go hand in hand with stringent regulations and a relatively high ability and willingness to pay for overall water services. However, developed countries also have a not inconsiderable proportion of low-income users with diminished purchasing power.

In developing countries, low-income consumers are very numerous and are more interested in basic water services (small volumes, water quality compatible with health requirements). In such countries, the vast majority of the population has little ability to pay. Willingness to pay may be similarly low, particularly with regard to sanitation services perceived as secondary in importance to access to drinking water.

In emerging countries, the ranks of the poor are still relatively swollen and the middle class is expanding at a rapid pace. As a result, consumers in emerging countries have characteristics in common with those in both developed and developing countries.

2.2. …met by diverse players

2.2.1. Equipment manufacturers

Equipment manufacturers produce end-to-end equipment and technologies, from basic network components like pipes to complex treatment and desalination plants.

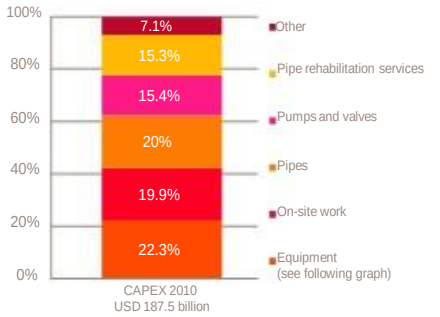
Some of the equipment and technologies are sector-specific, whereas others have wider uses, for example, construction, measurement, plastics, chemical and mechanical applications, and the transport of liquids in general.

Equipment manufactured for the water sector is mainly used for the following purposes:

- catchment and drilling (pumps);
- transport (connections, pipes, pumps, sluice gate, filters, taps, vents, fountains, etc.);
- treatment (filters, membranes, ventilators, stirring rods, basins, and chemical, mechanical and biological processes);
- disinfection (clarifiers, desanders, bioreactors and non-collective sanitation systems);
- measurement (sampling, analyses and metrology/electronic surveillance/recording/ continuous quality monitoring equipment);
- management of industrial effluents (process equipment).

Estimates regarding the water equipment market vary depending on the content of sub-sector definitions. According to the GWI's "Global Water Market 2011" report, the worldwide market for industrial and domestic water equipment is worth an estimated USD 187.5 billion. This amount breaks down as follows:

Figure 12: Worldwide market for industrial and domestic water equipment



Pumps and pipes together represent 35% of capital expenditure (*50% including pipe rehabilitation services*).

Basic network equipment

Market players range from large international groups (from the United States, Germany, Japan, Switzerland, the United Kingdom, Denmark and France) with an extensive range of products to local players with generally narrower product offerings. Local players continue to benefit from the existence of differing standards across regions and countries (physical standards, water quality requirements and so forth). For example, valve-related standards are broadly convergent in South America, Europe and Japan, but the United Kingdom, South Africa, Australia and the United States apply their own requirements. Therefore, any international player wishing to enter the latter markets is obliged to create adapted product ranges.

The core supplies provided by equipment manufacturers in the water sector are infrastructure-related (principally pipes, pumps and valves) and are used for both network upgrades in developed countries and the building of new infrastructure in emerging and fast-growing countries. Equipment manufacturers also supply other liquid-transport markets that are seeing stronger growth and are more lucrative (in particular, the oil and gas industry). The water sector is not a strategic priority for players because the related products offer thin margins (5% to 10%) and are becoming commodity items. For this reason, suppliers typically resort to diversification in order to achieve a wider, higher value-added range of equipment and services or pursue specialist acquisitions as a means of moving upmarket.

Water treatment and sanitation equipment

Water treatment and sanitation operations involve collecting and treating water to achieve a particular environmental water quality (determined by, for example, pollution and suspended-matter content, and aspect). More advanced treatment is applied to make the water drinkable. Based on the quality of the raw water or of the treated effluents, and on the targeted quality of the final treated water, the number of stages and the type of processes involved may vary considerably.

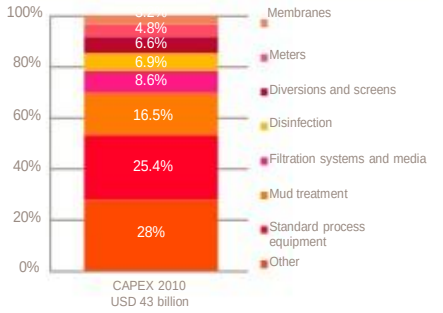
The equipment market is dominated by international companies which are mainly American, German, Japanese, British and Canadian. There is also a large contingent of cutting-edge technology specialists and a number of players with a very local focus.

The market is seeing consolidation among companies. Equipment manufacturers (notably GE and Siemens) were the first concerned, but major operators like Veolia and Suez also now seem to be emphasising vertical integration. These moves are intended to enable the provision of standardised turn-key solutions (particularly for desalination and water reuse plants) which deliver economies of scale, opportunities for the provision of complementary assistance all along the value chain and cost reduction throughout project life cycles.

The treatment and sanitation market is more complex than that for basic equipment because it is more fragmented (no equipment represents more than 10% of a given installation's value) and barriers to entry are powerful. Markets are often also regional or even local in nature because of the variety of standards and technology solutions across areas. In the case of new technologies, which typically enjoy intellectual property protection, specialist providers can impose high prices and reap healthy profit margins.

The "Equipment" category referred to in Figure 12 may be broken down as follows:

Figure 13: Breakdown of worldwide equipment market

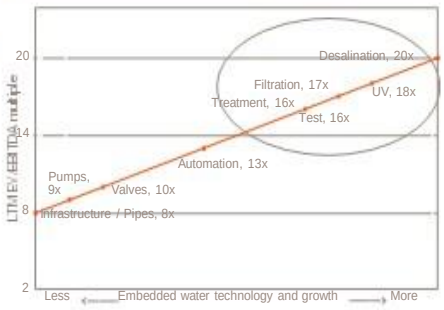


Standard process and mud treatment equipment represent more than 40% of the market. Next in line are filtration systems, disinfection equipment, and diversions and screens, each with 7% to 9% of the market. Meters and membranes represent respectively nearly 5% and 3% of demand.

Conventional treatment technologies like chlorine treatment still account for the bulk of market volume. However, complementary advanced treatments, new disinfection solutions and the intelligent technologies developed in recent years (for example, UV, nano/ultrafiltration, membranes, desalination, water reuse, energy efficiency-enhancing equipment for installations and intelligent measuring tools) all offer strong added value and should see robust growth of nearly 20% annually in some cases.

The Goldman Sachs water technology valuation continuum [18] is presented in the chart below. It shows a pronounced valuation differential between companies based on the technologies used, with an EV/EBITDA multiple [19] range of 8x to 20x for basic equipment and new technologies.

Figure 14: Water technology valuation continuum, 2008



In developed countries, demand is supported by increasingly stringent regulations and growing public awareness of risks concerning water quality (diseases, epidemics and so forth). In other regions subject to severe water stress or intensive urbanisation, new technologies are embraced as a means of enhancing water supply coverage, responding to public health concerns and ensuring better quality of life. In particular, demand for testing and measuring devices should be boosted by regulatory requirements (for example, in respect of new contaminants) and by the need to assess the efficiency of water management.

We have chosen to focus here on two particularly promising areas of technological innovation - wastewater reuse and water desalination.

Wastewater reuse involves the collection and treatment of effluents with a view to new applications: recharge of groundwater layers, rivers and oceans; industrial uses; irrigation; cooling/heating systems; and even drinking water. It is a means of limiting resource consumption (provided that prices are appropriately adjusted) and at the same time of avoiding the discharge of dirty or polluted water into the environment.

Thanks to the progress made with advanced treatment technologies, wastewater reuse is now a technologically feasible solution. Those most

18. Source: Goldman Sachs 2008, The Essentials of Investing in the Water Sector; version 2.0
19. Ratio between LTM EV (Last Twelve Months Enterprise Value) and EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortisation)

concerned include membrane manufacturers and system providers (notably Asahi, Dow, Eimco, GE Zenon, Hydranautics, Hyflux, Koch Membrane Systems, Kubota, Norit X-Flow, Pall, Siemens Memcor, Toray and Woongjin); suppliers of UV disinfection solutions and other advanced treatments (for example, Atlantium, BWT, Degrémont Ozonia, Fuji, ITT Wedeco, MIOX, Mitsubishi Electric Power Products, ProMinent, Severn Trent Services, Siemens Water Technologies and Trojan UV); designers and/or integrators (for example, AECOM, Black & Veatch, CDM, CH2M Hill and MWH); and operators of water purification plants (in particular, Acciona, Acwa Services, Aqualia, Befesa, Biwater, Degrémont, GE Water, Hyflux, Keppel Seghers, Siemens Water Technologies, Veolia Water Solutions & Technologies and Wabag). The expertise applied is derived from other applications, none of which is wastewater recycling-specific (a factor that makes it difficult to define sector boundaries). In practice, the growth of the wastewater reuse market is indirectly beneficial to an even larger swath of companies encompassing all equipment manufacturers involved in water transport, water treatment and sanitation.

Wastewater reuse is practised in the United States, Australia, Asia, the Persian Gulf and the Mediterranean Basin (reuse of urban wastewater in agriculture), and is largely the norm in Israel (recycling of 70% of sewage).

Demand for wastewater reuse is growing strongly worldwide. It is estimated that the volume of recycled water will virtually double over the next five years. According to recycling experts, demand growth will be uneven across regions. It should be very strong (40% to 60%) in areas subject to severe water stress (Spain, Italy and Australia) or intensive urbanisation (China) and strong in industrialised countries (about 25%). The main obstacles to massive expansion for drinking water purposes are public unwillingness to use water obtained from effluents and the high financial cost involved, which is a deterrent to risk-taking on the part of customers. Nevertheless, on islands, in coastal towns and in areas where the available supply of water is limited, or in the event of water use conflicts, wastewater recycling is an increasingly attractive option.

Desalination is the process of removing salt and other minerals from water (sea water, brackish water, river water, purified water and so forth). The main technologies used are distillation and reverse osmosis. Desalination currently meets less than 0.5% [20] of water needs worldwide. This apparent under-utilisation may seem astonishing, given that one-quarter of the world's inhabitants live less than 25 km from a coast. However, although salt water is both abundant and easily accessible, there are two other requisites for the installation of desalination facilities:

- the capacity to finance capital expenditure and operating costs above levels for conventional solutions;
- the absence of less costly alternatives.

Although desalination-related costs have fallen considerably (operating costs are now one-quarter of what they were 30 years ago), the technology is still relatively expensive. It is also overly energy-intensive, despite the improvement achieved in recent years (to 4 kWh/m^3 currently versus about 8 kWh/m^3 in the 1990s, with a target of less than 2 kWh/m^3 by 2015). Desalination providers include Energy Recovery (ERII), Degrémont, VWST and SITEM (for heat-sourced desalination, in particular).

Another sticking point for desalination projects is the matter of environmental and socio-economic impacts, which can delay the granting of plant permits. Concerns focus primarily on the impact on marine life (from the discharge of brine or the entanglement of marine organisms in intake structures) and secondarily on potential local opposition to development projects made possible by the availability of water.

Desalination is nevertheless gaining currency in coastal areas affected by severe water stress, with demand growing at a nearly 10% annual pace.

20. Source: GWI, Global Water Market 2011

2.2.2. Designers/integrators

Designers/integrators provide engineering and construction services for the installation of equipment ranging from simple networks to highly complex treatment facilities.

The line between companies that provide engineering and construction services and operators is increasingly blurred. This is because engineering and construction providers have used the expertise acquired in a particular technology to lay claim to a number of markets in an operator capacity. It is, therefore, more appropriate to distinguish between international and local companies which provide pure construction and engineering services that may or may not be water sector-specific, on the one hand, and companies which also have the capacity to act as operators, often in the sphere of treatment facility activities.

In recent times, the application of technologies like desalination has enabled a number of construction companies to develop operator-type skills. Such companies include the Spanish players mentioned later in this report in the operator category and Singapore-based Hyflux.

2.2.3. Operators

Operators manage water services, i.e., the supply of drinking water to consumers and/ or the management of resulting wastewater.

There are three major operator categories: public, private and a combination of the two. The vast majority of the global population is currently served by public operators. However, since the late 1990s, there has been a steady increase in private operators' share of global consumers.

Based on the most recent data available [21], the proportion of the global population served by the private sector in 2011 was 13% versus 5% in 1999. This means that the private sector's share of water management has more than doubled in the space of a decade. The percentage is expected to reach 16% in 2015 and 21% in 2025.

Public operators

The vast majority of the global population is currently served - and will continue to be served - by the public sector. A public operator is defined as an organisation that is majority-owned and controlled by the government.

Public operators may work within several frameworks. Firstly, there is the decentralised approach, corresponding to the widespread model for municipal water management. There are also parastatal-type public entities, which have autonomy, but are subject to specific legislation. Finally, there are public companies that resemble conventional businesses, but their shares are owned by local, regional or national authorities. Their organisational structure is typically like that of a private company and they may be subject to private law.

21. The estimates and market shares concerning served population cited in this section are derived from the Pinsent Masons Water Yearbook 2010-2011. They take account of inhabitants with drinking water and/or sanitation services provided by a private operator

The World Bank 2006 report entitled "Characteristics of well performing public water utilities" describes the features that have accompanied the spiralling decline (to varying degrees) in public operators' performances in many countries. Such features are low tariffs and low payment collection; inefficient water use by consumers, cost inflation from high consumption and substantial system losses; postponed infrastructure investment and maintenance; service deterioration; consumers' lessening willingness to pay; operators living off state subsidies; autonomy and incentive loss by managers; a consistent decline in service efficiency; increasing demand for subsidies, which often fail to materialise; operators unable to pay wages; and recurrent costs. Over time, assets and service quality deteriorate, generating future financing requirements of considerable proportion.

The two chief difficulties encountered in the public management of water are low government inducement for operators to perform and operators' dependence on the government's overall fiscal situation, resulting in a lack of financial autonomy. In such circumstances, business management is dictated by short-term political interests that do nothing to enhance service efficiency.

The World Bank report also outlines the characteristics shared by public operators currently considered to be well performing. They include a degree of external autonomy (monitoring of cost recovery, capacity to recruit and retain competent staff at competitive salaries); performance targets underpinned by KPIs (indicators assessing service continuity, water quality, the level of receipts and complaints handling) and by external financial audits; internal financial management accountability (performance-based remuneration of management and employees, annual staff appraisals and staff training); market orientation (outsourcing of certain functions, benchmarking in various spheres like customer satisfaction and service quality); and customer orientation (opinion polls, provision of timely information to customers, response to customer complaints). Examples of well-performing operators provided in the report are PUB in Singapore, the Philadelphia Water Department in the United States, SANASA in Brazil, SONEDE in Tunisia and Uganda's NWSC.

In developed countries, some public operators have strengthened their technical and managerial expertise by taking on employees of private companies upon the expiry of certain delegated management contracts. In certain places, this has led to a degree of remunicipalisation of water and sanitation management in the wake of delegation to the private sector. In the coming years, it will be interesting to observe the sustainability of that trend based on the performances of local government-operated waterworks, particularly as regards the management of assets, service quality and water tariffs.

Private operators

Two main models are used in the case of management by a private operator:

- Total privatisation of service and infrastructure: the United Kingdom and Chile are the only two countries to have opted for the total privatisation of their water sector, a decision made in both countries in the late 1980s. Regulation is assured by an independent regulatory body - the Office of Water Services (OFWAT) in the United Kingdom and the Superintendencia de Servicios Sanitarios in Chile.
- Delegation of public water and sanitation services to the private sector: this is the prevalent form of private-sector participation in water management. The extent of the private operator's involvement varies depending on the business model adopted and the contract framework. However, infrastructure always remains the property of the authorities (or returns to ownership by the authorities upon contract expiry in cases where investments have been made by the private operator during the term of the contract). There are many, varied approaches to public service delegation, which are dealt with in Section III.

Since 2000, the private sector has undergone profound changes. Operators of highly distinct sizes encompassing two international giants, national and regional operators, and private, family-owned, small-scale players populate the sector. Changes in the private operator landscape have been accompanied by equally marked shifts in strategy during the past decade.

In 2001, the "big five" (France's Suez, Veolia and Saur, Germany's RWE and Spain's Aguas de Barcelonas [22]) accounted for 73% of the population served by the private sector, but their overall market share had fallen to 31% by 2011. In that year, Veolia and Suez each had nearly 125 million customers, corresponding to 27% of the population served by the private sector. Other notable players making headway include FCC of Spain and SABESP of Brazil, which each hold 3% of the market (i.e., the present combined market share of Saur and RWE), and four Chinese operators (Shanghai Industrial Holdings, Beijing Capital Co., Beijing Enterprise Water and Chongqing Water Group) with a combined market share of close to 10%.

The past decade notably marked the end of market domination by the historically present multinationals and the rapid rise of national operators in developing and emerging countries. A more detailed overview of these private operators is provided in Section III.

Community and associative management

In the rural and semi-urban areas of developing countries, water management may also be provided at the community level. The traditionally-informal nature of this ancestral approach to water management has been changed by the mid-1990s emergence, especially in Sub-Saharan Africa, of entities with a clearer legal status, such as consumer associations and management committees. Such bodies aim first and foremost to provide water services and represent users.

Mali and Benin, for example, have each seen the establishment of an association of water users (Association des Usagers de l'Eau - AUE) for the purposes of promoting community drinking-water supply systems and managing equipment. In Senegal, several hundred operating permits have been granted to associations of borehole users (ASUFOR) since 2000. Such associations remain very popular in Senegal, but Benin has now introduced tripartite delegated management contracts involving regional authorities, consumer associations and private delegated managers. However, the trend since the mid-2000s has been towards delegating the role of operator to private players rather than to associations, with a view to aiding the professionalisation of water services and thereby improving performance.

Associative management poses a number of constraints. The participatory approach adopted has the merit of allowing local populations to express their views and thereby provides deeper insight into users' needs. However, mainly because of their small scale, associations generally have relatively limited technical skills and financial wherewithal - a situation inhibitive to equipment extension, upgrade and maintenance. If their members are well trained, associations can easily perform water distribution, but production is a more complex matter. Assistance with technical and financial issues is absolutely essential, and advisory and monitoring units have been set up to support associations in those fields. For example, a technical and financial monitoring service (STEFI) has been introduced in Mali and subsequently in Chad and Niger. These monitoring services are performed by private providers in exchange for a fee factored into the price of water.

22. Aguas de Barcelonas (Agbar) has been a subsidiary of Suez Environnement since May 2010

2.2.4. Regulators

The role of regulators is to establish and enforce the rules governing the water sector. This role embraces issues concerning water prospecting and conservation; pollution assessment and reduction; regulation of water use; regulation of water tariffs; compliance with health and water quality standards; access to water; consumer satisfaction levels; and infrastructure maintenance.

The role and prerogatives of regulators fall within the province of governance, which is dealt with later in this document.

Regulation, a necessity for the water sector

The water sector is a natural monopoly of a local nature with a very low exposure to competitive pressure as a result of the global and/or local oligopoly formed by operators. Market forces consequently cannot be relied upon to ensure efficiency and optimal pricing. As such, regulation is essential for the attainment of long-term policy objectives, the equitable treatment of all stakeholders and the protection of users (especially the poor) from possible unfair practices by private water operators. Regulation also serves to protect the private sector from arbitrary political decisions. Although approaches tend to be country-specific, it is possible to identify common strands, as follows:

- There is no systematic correlation between a given country's institutional organisation (for example, a federal structure) and the organisation of sector regulation.
- There is no blueprint for defining the roles and responsibilities of the various ministries and government levels involved in the water sector. However, observable trends include:
  - the decentralised application of public policies, not necessarily accompanied by an increase in the financial and technical resources allocated to regional/local authorities;
  - a preference for water management at basin level;
  - the implementation of a coordinated framework at the national level (supervisory ministry, interministerial entity or mechanisms, dedicated coordination entity), with a view to improving information exchanges and avoiding overlaps between areas of responsibility;
  - increased recourse to the private sector in some countries, for two main purposes: (i) the operation of infrastructure and, in some cases, infrastructure investment to counter public spending cutbacks; and (ii) the securing of technical and managerial expertise.

International supervision

The existence of transboundary rivers makes it necessary to achieve cooperation among several countries with regard to the exploitation and conservation of water resources. Such cooperation is key to sustainable water management and, in some instances, to stability between countries at risk of water stress. Access to water resources is, therefore, an issue of growing geopolitical importance.

At the World Summit on Sustainable Development held in Johannesburg in August 2002, the United Nations Organisation (UNO) established a number of guiding principles for application worldwide, notably concerning access to drinking water and sanitation facilities. The organisation also formulated the Millennium Development Goals and is spearheading a large number of water-related agreements, the terms of which are to be transposed subsequently into national law in countries around the globe.

Organisation of players at the national level

The allocation of roles and responsibilities for national regulatory purposes is often determined largely by a law or act specific to the water sector. The three most common forms of regulatory body are as follows:

- Ministry or government agency: the Israeli Water Authority (part of the Ministry of National Infrastructure), for example, formulates policies, assures policy implementation monitoring, and performs water distribution and sanitation planning at the national level. Its mandate includes the allocation of resources (drinking water, recycled water and sea water) to uses (agricultural, industrial and domestic), and the recommendation and application of quotas, regulations and tariffs based on the type of use.

- Dedicated agency with broad regulatory powers in the sphere of water, with varying degrees of financial and/or political autonomy: this form of regulatory body is generally used for infrastructure-related services (water distribution and sanitation) and is intended to protect users and enhance efficiency. Agencies' duties may include tariff approval, information system management, the conduct of comparative analyses of distributors and complaints handling. In the United Kingdom, for example, the Office of Water Services (OFWAT) is responsible for economic regulation of water management, which is entirely privatised. Two other bodies play a role in water regulation - the Environment Agency (in charge of environmental issues) and the Drinking Water Inspectorate (in charge of health issues).
- National body with specific regulatory powers: in France, no single entity has powers as extensive as those of OFWAT. Economic regulation is provided by several parties. Parliament defines the tariff-setting procedure and regulates the Water Agencies' revenues, but water pricing is local and is decided jointly with local government (with roughly 20% of the price decided by other parties, including the Water Agencies). The National Office for Water and the Aquatic Environment (ONEMA) is responsible for research and evaluation concerning the condition of water resources and the aquatic environment at the national level. ONEMA is involved in regional water policy planning and in the verification of regulatory compliance.

Institutional framework

Institutional frameworks reflect the history and political organisation of countries. The institutional framework may be determined by one or more laws or even by the Constitution, or may be organised in an ad hoc manner. However, water issues are essentially local in nature and are shaped by geographical and hydrographical characteristics. This explains the generally decentralised approach to water management.

Following a survey covering 17 countries, the OECD has identified categories based on the allocation of roles and responsibilities at regional and local levels.

- Central players: these are mainly federal states with pronounced geographical and hydrological disparities or strong regional characteristics. They are federation member-states and are in charge of allocating water resources and regulating water use.
- Joint role with central government: most often, there is a national framework for the definition of water-related priorities (by means of laws, decrees and so forth). Prerogatives are then split between regional/local and national policy-makers. In France, for example, the Ministry of Ecology formulates and coordinates the national water policy, but water distribution and sanitation services are the responsibility of local authorities.
- Mainly in charge of implementation: there are countries where local authorities act as intermediate users. They purchase water from the national system and then sell it to end-users. There is no participation at intermediate government levels. All is decided and managed at the central government level and there is no management system at basin level.

Particular case of small local operators

In the case of small local (and often informal) private operators, especially in Sub-Saharan Africa, regulations - when they exist - frequently cannot be implemented because of a lack of monitoring and penalty-enforcement resources. However, some countries have set up national bodies to coordinate policy in certain areas of the water sector. In Mauritania, for example, small private operators provide services in small towns with a low population density and where scant economies of scale limit larger operators' presence. A national body has been created to manage contract awards. In Mozambique, small private players operate in areas bordering those served by large operators, for example, peri-urban areas like the Maputo suburbs. In such places, the task is to regulate the interface between the official operators and their informal counterparts, not least of all to ensure the long-term survival of the small providers. The challenge for the regulator is to strike a balance between the scope, purpose and implementation of the rules imposed, on the one hand, and allowing the market a degree of flexibility, on the other hand. In practice, flexibility is central to the success and survival of small operators.

Section III - Private operators: competitive forces, models and risks

The landscape of the water sector and the competitive forces that shape the industry have changed profoundly during the past 15 years. There are now four major categories of private operators worldwide: the two major players, European operators, operators in emerging and developing countries, and small private companies.

Private operators have very varied operating formats, which likewise are evolving rapidly in order to contain the numerous risks associated with water management.

3.1. The majors: Veolia Eau and Suez Environnement

Profiles of the Veolia and Suez groups

Veolia and Suez started out in a very similar manner. They can each be traced back to the mid-19th-century creation of a company to provide water, gas and lighting services. The nationalisation of France's energy sector in the wake of World War II enabled the two groups, originally known as Compagnie Générale des Eaux in the case of Veolia and Lyonnaise des Eaux in the case of Suez, to refocus on water-related activities and become global-scale leaders.

Development strategy implemented to date

Veolia

Veolia Eau is the world's top private water operator, providing a water supply to 100 million people and sanitation services to 71 million people. The company boasts a decentralised, global organisation as well as a more centralised subsidiary. There are six large operating management units, reflecting the geographical markets in which the company has operations, and the Veolia Water Solutions and Technologies (VWST) subsidiary, which specialises in engineering, and the design and construction of turn-key plants and technology solutions. Veolia Eau manages roughly 40% of drinking-water services and 28% of sanitation services in France. Its Veolia Water North America subsidiary is the leading operator in North America. In China, Veolia built market share first in major cities and then gradually in secondary cities, and is now the largest private company in that country's water sector.

Veolia's global leadership is attributable to a number of factors. These include the group's focus on research and development and managing large-scale, long-term contracts and the VWST subsidiary's positioning as a relatively centralised entity specialising in water technologies, which has helped establish Veolia as a frontrunner in cutting-edge technologies.

Veolia Eau is currently realigning its business base. Signs are that the strategic emphasis in the coming years will be on achieving an optimal balance between growth and profitability, in particular through the reorganisation of activities around local-authority contracts which mobilize large amounts of financial resources and the search for contracts with lower capex requirements. To this end, the group intends to accelerate its cost reduction plan, while continuing to allocate major resources to R&D activities, and move ahead with its programme of disposals, including the sale of the United Kingdom-based regulated activities. After the recent acquisition of United Utilities, little additional acquisition activity is planned. Priority will be given to value-creating organic growth, through the conquest of new markets and the strengthening or consolidation of established positions (in France, China and North America). Organic growth will also be sought in the high value-added environmental services market, where demand is on a rising trajectory and supply is still scarce. For this purpose, particular emphasis will be placed on major manufacturers in emerging countries, thanks to an increasing focus on key account management policies, and on adapting the French model of delegated management to other European countries and the United States. The Veolia Group is also present in Latin America, through partnerships.

Suez Environnement

Suez Environnement is the world's second-largest private water operator, providing water and sanitation services to 91 million and 61 million people, respectively. In addition, 1 billion inhabitants benefit from services provided by water treatment plants built by Degrémont. Suez Environnement's activities are centred on water and waste management. The group's strong presence in France and abroad is founded on large companies with clearly-defined geographical bases, for example, Lyonnaise des Eaux in France (no. 2 after Veolia), Agbar in Spain (no. 1) and United Water in the United States (no. 2 after VWST).

Since the 1990s, Suez has endeavoured to enter a number of higher-risk emerging countries in order to overtake archrival Veolia. For a certain time, the strategy enabled the group to take the lead in terms of population served. However, the repercussions of the 1998 Asian crisis and of the devaluation of the Argentine peso in the

2000s will doubtless lead to a withdrawal from a number of emerging markets, particularly some Latin American countries and the Philippines. In addition to suffering heavy financial losses, Suez has opted out of many contracts (Buenos Aires, Santa Fe, La Paz El Alto, Atlanta, Puerto Rico, Tuas in Singapore, Manila and Ho Chi Minh City). The group still has footholds in China, Morocco and Eastern Europe. The current strategy, of a more conservative nature, is founded on two guiding principles: low risk and low capital exposure (or even withdrawal). This suggests that Suez is now more interested in financial stability and performance predictability than in growth.

Degrémont, the Suez subsidiary which builds treatment plants, has a strong reputation worldwide and remains active in international markets for water, desalination, sanitation and recycling.

3.2. Other large European companies and their international ambitions

Saur, France's third-largest operator, and FCC/ Aqualia of Spain are present in their home markets, in other European countries (Italy, Portugal, Poland and the Czech Republic) and on other continents, mainly in the Middle East, North Africa and China. RWE, one of the few electricity operators still with a presence in the water sector, has exited a large number of international markets since 2004 and is now focused on Germany and Eastern Europe. Italy's Acea is present mainly in its home market and in Latin America, where it intends to remain.

Proactiva, the joint venture between FCC and Veolia, and Aguas de Barcelona (Agbar - Spain), which is now a subsidiary of Suez Environnement, are very present in Latin America. The Latin American region is Proactiva's main focus. Agbar is on the look-out for new contract opportunities in Brazil, Peru and Chile, having established operations in China, North Africa and the United Kingdom since 2006.

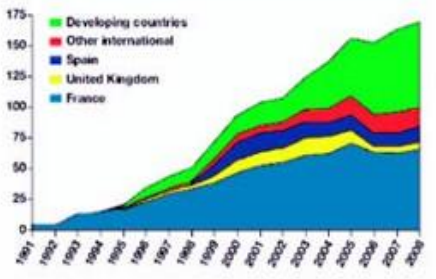
In the case of British companies, regulations were tightened in the early 2000s and assets are now predominantly owned by investment funds. Nearly all British operators have forgone international contracts in recent years. Only three companies still have contracts outside their home markets - Anglian Water, whose sole foreign base is in Ireland, and Biwater International and Severn Trent, which have maintained their strategy anchored in service contracts not requiring substantial investment for the US and Italian markets.

Thanks mainly to its expertise in water treatment, Remondis Aqua (Germany) is rapidly expanding its business base in Europe (Spain and Poland), Turkey, Russia (where it has become the first foreign operator to win a PPP contract) and India. Also noteworthy are Spanish construction companies (including Cadagua, Acciona Agua, OHL and, more recently, clean-technology specialist Abengoa), which are making strong progress and have won concessions for desalination plants on all continents.

3.3. A new breed of player: private operators from emerging and developing countries

Two figures [23] perfectly capture the emergence of these new players during the past 10 years. In 2001, five international operators (Veolia, Suez, Saur, Agbar and Thames Water) shared more than 80% of the population served by private operators in developing countries. It is estimated that in 2008 national private operators in developing countries served more than 40% of that population segment.

Figure 15: Share of population in developing countries served by private operators, 2009



Source: Marin 2009, updated with 2008 data.

Three principal factors are at work here

a) Strong skills acquisition by local operators (which are often construction players or industrial diversification-minded industrial conglomerates), thanks to knowledge transfer under successful partnerships with international operators (the case of Manila Water in the Philippines), or to the recruitment of experienced employees with a public-service background (as in Colombia), or to technical assistance received from a recognised foreign operator (for example, the assistance provided to the Salta concession in Argentina by Brazilian operator SANEPAR).

In Latin America, national operators have gained ground over the years, especially in Colombia, Chile and Brazil. In Russia, two energy groups (Rosvodokanal and Russian Communal Systems) have become credible water operators and have received generous funding from the EBRD. In India, giant conglomerate Tata's JUSCO subsidiary operates in cities with several hundred thousand inhabitants (Jamshedpur, Mysore and a sector of Calcutta). In China, financial conglomerates like Beijing Capital Co., infrastructure groups like Shanghai Industrial Holdings and Cheung Kong Infrastructure, and design/engineering players like Shanghai Urban Construction Group are expanding at a spectacular pace in the water sector. In Brazil, SABESP, São Paulo State's water utility, has been partially privatised since 2002 and its shares are traded on the São Paulo and New York stock exchanges.

b) The undeniable success of certain local operators with regard to improving access to water and water service quality. Notable examples are Manila Water in the Philippines, Conhydra in Colombia and SABESP in Brazil, which is recognised as one of the most financially solid operators in the region.

c) The withdrawal by major operators from markets posing political and institutional risks, which has given operators from developing countries the opportunity to achieve significant market share gains. The erstwhile pre-requisite of historical expertise in water management has been gradually superseded by an understanding of socio-cultural issues, stakeholders, and local political and regulatory imperatives.

These operators have also displayed broader regional ambitions in recent years. Emboldened by their success at the domestic level, some players are looking to win contracts in neighbouring geographical markets. LatinAguas of Argentina is present in Peru. Manila Water of the Philippines operates in Vietnam and India, and has set its sights on China and Indonesia. Ranhill Utilities of Malaysia is present in China and Thailand.

23. Water operators from emerging markets: new players for public-private partnerships, GRIDLINES (World Bank), June 2010

3.4. Emergence of small private operators

Small private operators are typically owned by individual entrepreneurs or families. They differ from small community- and association-managed operators, which have served and continue to serve in a largely transitional capacity.

Some regions and/or populations (chiefly in peri-urban and rural areas, but also in urban areas) are not served by the principal operator categories presented above, mainly because of a lack of flexibility and responsiveness on the part of such providers and/or because of economic considerations. The gap has been bridged by a bevy of small formal or informal operators, of which more than 10,000 were reported by the World Bank in 2005. Their principal characteristic is that they meet needs which are not (or are not yet) addressed by traditional operators, i.e., the "minimum" needs of low-income populations and demand from newly-built residential areas not yet connected to the mains. Such small-scale players provide essential access to water services for millions of people around the world. In 2006, the OECD estimated that small operators supplied about 25% of the urban population in Latin America and Southeast Asia and 50% of Africa's urban population.

Russia's Rosvodokanal operates in Ukraine and the China Gezhouba Group Corporation has won a sanitation contract in Nouakchott, Mauritania.

In Africa, a number of public operators likewise have ventured beyond national borders and have become private operators in other countries on the continent. Examples include Morocco-based ONEP's projects in Cameroon and assignments performed in Ghana by South-Africa-based Rand Water in partnership with Vitens-Evides International of the Netherlands.

Small operators fall into two main categories based on service area - urban or rural. In urban areas, they are generally responsible only for water distribution, under the aegis of an official operator (as in Abidjan, Manila and Ho Chi Minh City). There is an observable growth trend in the participation of such micro-services/mini-networks backed by larger-scale operations. In rural areas, small operators engage in both production, based on a proprietary supply source, and in distribution, as independent players either subject to regulation (by the national operator or government) or with completely informal status. In semi-urban areas, a variety of situations may be encountered.

Small operators' principal strength lies in the provision of flexible, tailored services that exactly match specific needs. Providers are close to the consumers that they serve; they know users' requirements and constraints, and are commercially savvy. This enables them to offer specific services for users outside conventional operators' remit, including small-volume supply, household access to water and even filtered water, bottled water and ice.

However, because of the often very informal nature of the activities performed, the prices charged by small operators are frequently high: for lack of a long-term investment strategy, profitability maximisation becomes paramount. In addition, small operators have difficulty accessing loans and consequently have to commit equity capital, with the result that rapid return on investment becomes an absolute priority. Other areas of concern are water quality control, together with inadequate governance potentially leading to corruption-induced cost overruns that are then reflected in tariffs. Professionalisation is clearly essential and will be aided by the organisation of technical and financial assistance and regulatory oversight for small operators. Negotiations between players and public authorities are at different stages across countries. In Laos and Madagascar, a formal framework is in the pipeline. In Mauritania, small operators already have official recognition under the water code, since nearly 100% of drinking-water supply networks in the country's rural and semi-urban areas are managed by stand-alone private operators. Widespread discussion is in progress concerning ways to promote the financing, monitoring and control of these all-important providers of drinking-water services.

3.5. Models and risks

During the past two decades, the myriad constraints applicable in the water sector have given rise to various forms of delegated management of public services by the private sector, which have been tested in practice. The constraints notably include local realities (degree of knowledge of the state of the network, level of investment required), social limitations (users' demands as well as ability and willingness to pay), economic constraints (currency risk depending on the currency in which debt is denominated, devaluation risk) and regulatory considerations (requirements in terms of drinking-water quality and wastewater treatment or foreign investment compulsorily through legally mandated vehicles, as in China).

Depending on the nature of the contract, the extent of private-sector involvement varies, from the lowest level (technical assistance) to the highest (concession arrangement). The scale and range of risks incurred by the private operator are correlated to the degree of involvement.

In the case of technical assistance contracts, the operator undertakes to provide services for a short-term period (less than two years) in exchange for a pre-determined fee. Services covered include meter installation, invoicing and payment collection. The associated risk for the operator is very low.

In the case of a management contract, the authorities delegate responsibility for service operation and maintenance to the operator for a period of three to five years. If the operator's fee is pre-determined, the operator has no commercial risk - and little incentive to improve service performance. Alternatively, if a portion of the operator's fee is based on performance in terms of service quality and efficiency gains, the operator bears a portion of the commercial risk. The public authorities retain financial responsibility for the service and all related capital expenditure, and employees retain civil-servant status. Management contracts of this kind are increasingly common and allow the transfer of know-how from the private

sector to the public sector. The management of water services can thus be optimised in a climate of trust between the two parties, without excessive involvement on the part of the private sector. Another advantage concerns the problem of public water operators' lack of motivation to enhance service quality, as mentioned above. Contracts with a performance-based fee can help here by encouraging the spread of operating-efficiency good practices, notably in respect of water loss reduction, payment collection and workforce productivity. In developing countries especially, such contracts have the potential to aid public service reform by providing a transitional period during which management capacities within the public service are strengthened through temporary recourse to private-sector expertise.

In the case of a lease, the operator is responsible for the operation and maintenance of water and/or sanitation services and receives remuneration in the form of the revenues from the services in question (which are often based on the volume of water sold). The lease term is usually about 10 years to 15 years. The main feature of such contracts is that all of the commercial risk is transferred to the private operator. As the operator is responsible for invoicing and payment collection, there is a strong incentive to optimise the service provided. In some circumstances, the commercial risk may be particularly high. In developing countries, for example, consumers' ability to pay and collection rates are often relatively low. Moreover, in developed countries, the downward trend in overall demand has a direct impact on operators' revenue streams. Therefore, the operator would be well-advised to reduce Non-Revenue Water, which encompasses unpaid bills, water leakages in the network and defective meters. The operator is tasked with network upgrades and maintenance and, therefore, provides the necessary working capital. The public authorities retain ownership of the infrastructure and finance new investments (network extensions) and major repairs. The authorities further remain responsible for debt-servicing, tariff-setting and the cost recovery policy. In theory, if the total amount invoiced to consumers exceeds the private operator's fee as provided for, the operator is required to hand over the surplus to the public authorities for use for debt-servicing and investments.

In the case of a concession, the most binding contractual arrangement for a private operator, all operating and maintenance responsibilities and all investments (for example, for new infrastructure) fall to the operator. The public authorities retain ownership of the assets, which are provided to the private operator during the concession period and which must be returned at the end of the concession period. The private operator is exposed to a high financial risk corresponding to the substantial investments that it is usually required to fund. Concession contracts are of long duration, typically 20 years to 30 years, to accommodate return on investment. They were widely used in the private sector during the 1990s, when the major water utilities expanded their international operations. At that time, insufficient budgetary resources and huge investment requirements prompted the public authorities in many countries (especially in Latin America) to see the private sector as a source of massive financing for the water sector. The shortcomings of this thinking soon became evident, as operators sought to recoup their investments through frequently large tariff increases. This was untenable in many developing countries where investment needs are substantial, the population's ability to pay is low and willingness to pay was dampened by the price hikes. This is understandable because the link between profits from the services provided and service pricing is often poorly explained by operators and badly perceived by users. Public water tariffs were initially set at low levels divorced from the real cost of providing water services. In addition, private operators often lack transparency and their time horizon differs from that of the other stakeholders (operators, politicians and consumers): the improvements delivered under concession contracts in emerging and developing countries are only gradually discernible and take time because of the scope of the changes required. Consequently, financial risk (impact of debt-financing on gearing, combined with currency risk resulting from borrowing in local currency) is not the sole challenge faced by operators in such countries. There are also significant social risks (refusal to pay high tariffs, increasingly radical

rejection of private management) and political risks (attempted government interference in operator pricing policy or instrumentalisation of situations). High-profile examples of failed concession contracts include several arrangements in Argentina and Bolivia, which have simply been cancelled and have triggered serious legal disputes.

3.6. Which models will be used in the future?

The past 20 years' experience of projects involving the private sector has shown that the transfer of responsibility for water management from the public sector to the private sector has not been a straightforward matter in developing countries. In most developed countries, infrastructure has been financed historically by taxation. Furthermore, total private-sector financing would mean that tariffs would have to give an accurate reflection of costs (including investments, however large), which would have implications for users. Such a model cannot be sustained if the majority of users lack the ability to pay all of the costs involved.

A gradual approach

Past experience therefore suggests that the private sector should be involved gradually, so as to allow for the manifold risks resulting from the complexity of the water sector. Management contracts provide an opportunity to take stock of reality (state of the network and equipment, management capacity of the incumbent public operator's teams) and to enhance service operating efficiency. The operator has the chance to assess potential future investment requirements and make provision for them with a moderate risk exposure. This means that only contracts which bind the private-sector partner over the longer term (i.e., leases, leases with concession-type features and concession arrangements) should be considered. In all cases, it is vital to find the contractual balance that will permit the tailoring of investments to needs, together with sustainable cost recovery supported by a range of financing strategies - tariffs, state subsidies, international aid and private financing (when financial markets are sufficiently mature).

The need to reconcile imperatives has given rise to hybrid models. Most notable among these are concessions involving state subsidies to finance investments (Argentina, Colombia and Ecuador) and semi-public, semi-private companies

Section IV - Economic analysis

Satisfying the demand for water assumes both sufficient resource availability and an industrial network capable of collecting and treating raw water, and transporting it various distances in order to supply population centres.

These activities form part of the water value chain and each is bound up with issues of cost, financing, investment, pricing and value added.

An economic analysis gives us an understanding of how and under what conditions this vital service can be harnessed to an economic model.

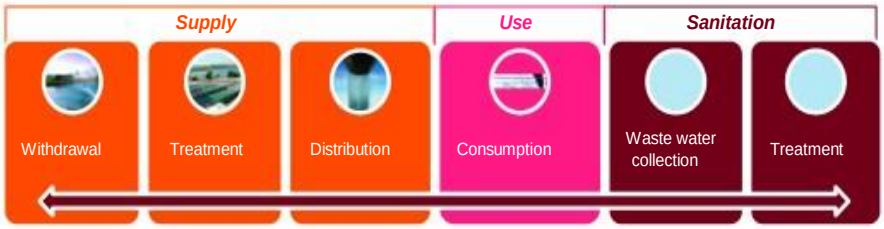
This section will tackle the following issues:

- What is the cost structure of water? What are its components? Can we speak about a single cost of water?
- What cost recovery systems exist and how are prices formulated in such a context?

4.1. Analysis of cost structure

The water value chain comprises a continuous cycle divided into a number of stages, from water withdrawal from the natural environment through to wastewater sanitation at the end of the cycle.

Figure 16: Water infrastructure cycle



Each stage of the cycle generates two types of cost:

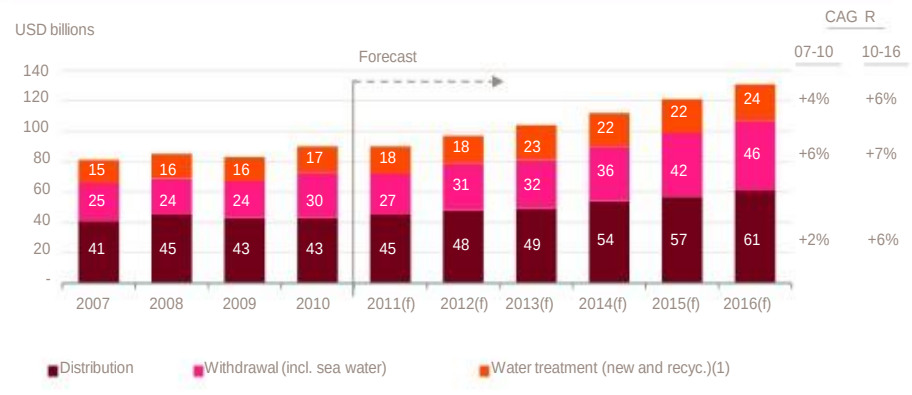
- investment costs used to set up or overhaul the infrastructure. These are fixed costs; and
- operating costs incurred for the purpose of operating this infrastructure, including labour, ancillary services or treatment products. These are variable costs.

4.1.1. Drinking water supply drivers

The process of supplying drinking water begins with capturing water at source and ends with water distribution. The wastewater is then returned to the environment. Water is drawn from surface water or groundwater aquifers, or obtained by desalinating sea water, before being treated and transported to populations via a dedicated distribution network.

Greater demand for drinking water driven by the increase in the world's population, as well as by increased urbanisation, will push up the costs associated with water withdrawal, treatment and distribution infrastructures by an estimated annual average of 6% to 7% between 2010 and 2016. Based on these projections, the costs of maintaining and extending these distribution networks is set to reach USD 61 billion by 2016, an average increase of 6%.

Figure 17: Investment in water supply infrastructures



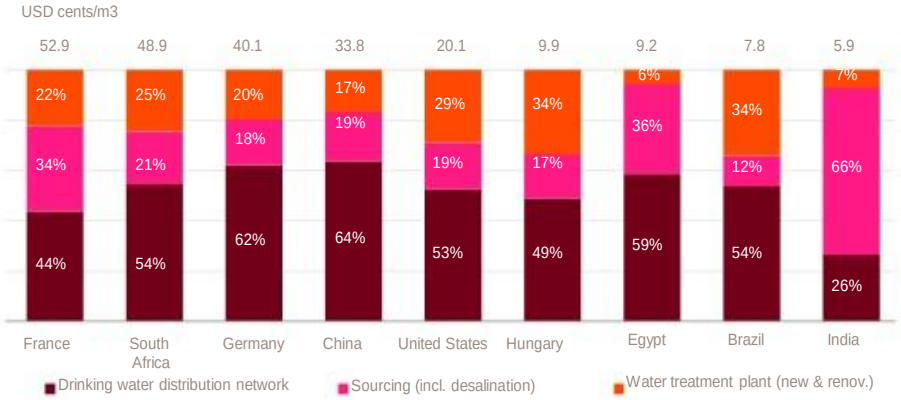
(1) New or renovated infrastructures

This overall picture masks a number of different patterns. Analysing trends in several different countries highlights certain drivers:

- An existing infrastructure for transforming raw water and reflecting current national priorities.

Generally speaking, setting up a distribution network is the biggest cost involved in supplying drinking water while treatment and withdrawal costs are roughly similar. Differences in cost are usually a function of national characteristics and issues in terms of water availability and quality and the level of treatment required to turn the resource into drinking water.

Figure 18: Investment in water supply by type of cost, 2010



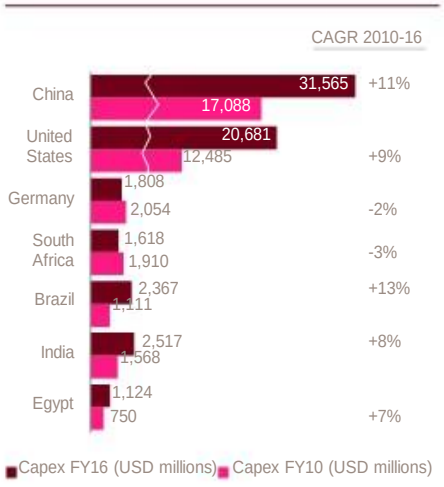
In the United States, water has to be treated because of intensive household and industrial pollution of water reserves. Hungary faces similar problems because it lies downstream along rivers that have been polluted by neighbouring countries. In India, the government has invested huge amounts in desalinating sea water due to water withdrawal problems.

- Breakdown and population trends of a given geographical area.

Countries with stable population growth will slow down their investments whereas those experiencing strong population growth will have to increase their investments significantly in relative terms.

For example, Germany and South Africa, which are currently experiencing stable or even negative population growth (negative 0.1% and positive 0.4% growth, respectively, between 2010 and 2015) need to curb their investments and focus on calibrating their infrastructure in line with demand. However, China, the United States and Brazil need to do the opposite in order to improve the quality of water provided, to cover the needs of the population and to deal with an ageing infrastructure.

Figure 19: Investment in water infrastructure, 2010 vs. 2016



4.1.1.1. Water withdrawal

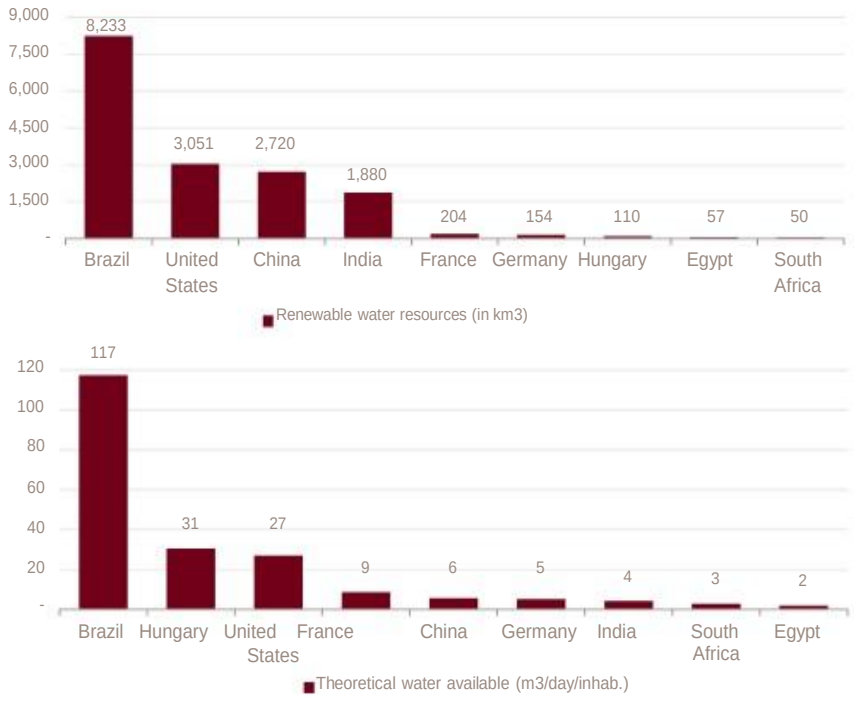
Both new and renovated water withdrawal infrastructures include reservoirs and water towers, pumping stations and the network of pipes and mains that links the pumping station to the treatment facilities. In 2010, drinking water withdrawal equipment costs totalled USD 30.5 billion, including USD 11 billion for desalination equipment.[24]

Water withdrawal investment costs are a function of (1) the location, access and availability of water resources and (2) the existing situation, i.e., the existence of an adequate infrastructure.

Theoretical availability of the resource and productive capacity

Theoretical resource availability is related to the geographical, hydrographical and climatic situation of the area in question. Theoretical wealth in terms of renewable resources per inhabitant is one of the key variables for determining a country's capacity to meet the demands of its population. Brazil is one of the best endowed countries with over 8,200 km³/year of renewable resources and 117m³/day of renewable water per inhabitant. Hungary only has 110 km³/year of renewable resources and a theoretical availability of 31m³ of water per day per inhabitant, while a US, French or Egyptian inhabitant has renewable resources of 27m³, 9m³ and 2m³ per day, respectively.

Figure 20: Theoretical availability of renewable water per inhabitant

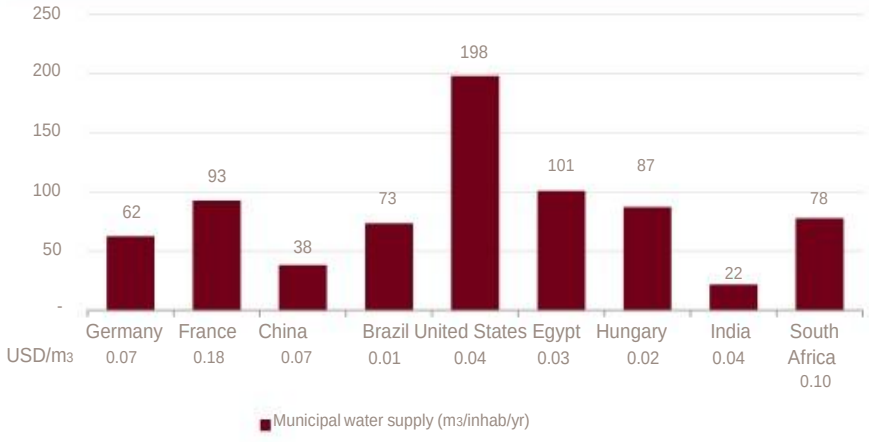


24. Global Water Intelligence 2011

The difference between the theoretical volume of water available and the volume of water actually distributed lies in the capacity to withdraw and treat water in a given geographical area. The annual supply per inhabitant and the investment per cubic metre of water gives us a more detailed picture of the disparity in investment costs.

As regards water withdrawal costs, Hungary, Egypt and Brazil have among the lowest unit costs, i.e., less than USD 0.04/m3. One explanation for this is the location of the raw surface water. In Egypt, the Nile is the main resource and all water drawn from the river is managed in an optimal manner.

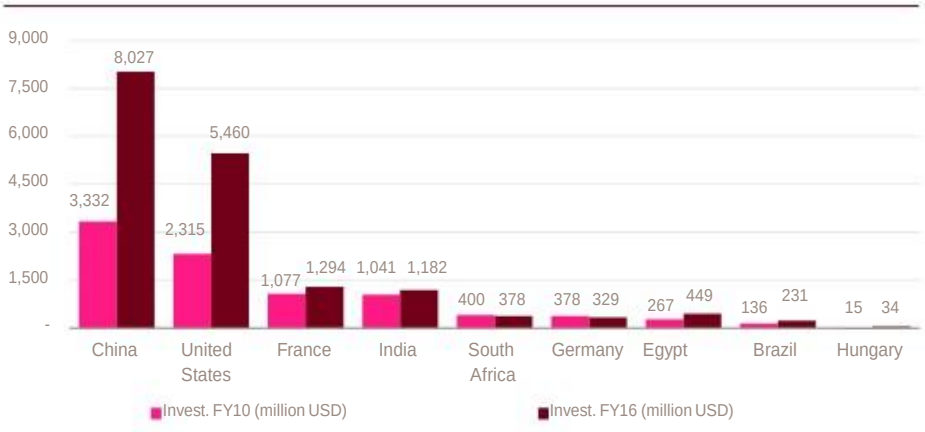
Figure 21: Municipal water supply (cubic metre per inhabitant per year) and investment per cubic metre



Trends and outlook

China and the United States are among the biggest investors in infrastructure to capture and pump water due to the needs of both local populations and industry. Both countries plan to double or even treble their investment in order to enhance their water supply capacities, which would in turn boost their capacity to capture the resource.

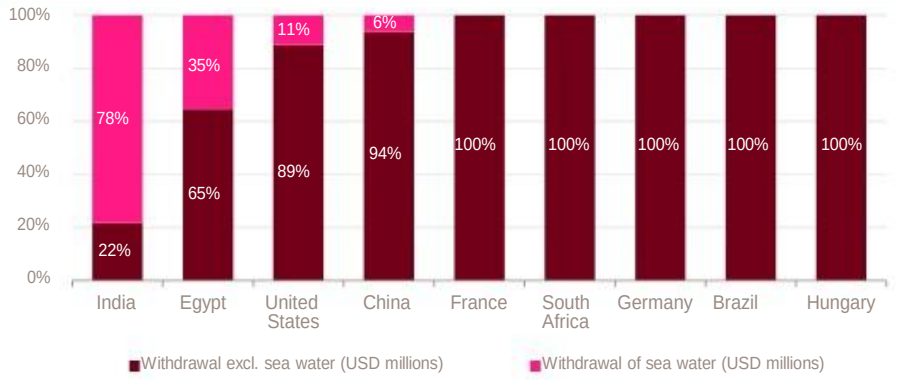
Figure 22: Investment in water withdrawal, 2010 vs. 2016



France and Germany have a combination of existing withdrawal capacities, good service and declining consumption. Between 2010 and 2016, France plans to increase its capacity by 2% on average in value terms while Germany's investment is set to decline by 3% over the same period.

The pollution of water by industry, agriculture and household waste has acted as a stimulus for new alternative withdrawal sources such as the desalination of sea water. For example, 78% of Indian expenditure has gone into pumping sea water, against 35% in Egypt or 6% in China.

Figure 23: Investment in water withdrawal, 2010 vs. 2016



Sea water is a vital resource for certain countries, for example, most of Qatar's domestic water is drawn from the sea. Qatari investment in sea water is estimated at USD 112 million whereas water for agricultural use comes from groundwater and represents USD 427 million. [25]

Aside from this measurement, which reflects the level of renewable water resources, it is the existence of infrastructure to capture and treat water throughout the national territory that makes this water available and renders its use effective (i.e., agricultural, industrial or domestic use).

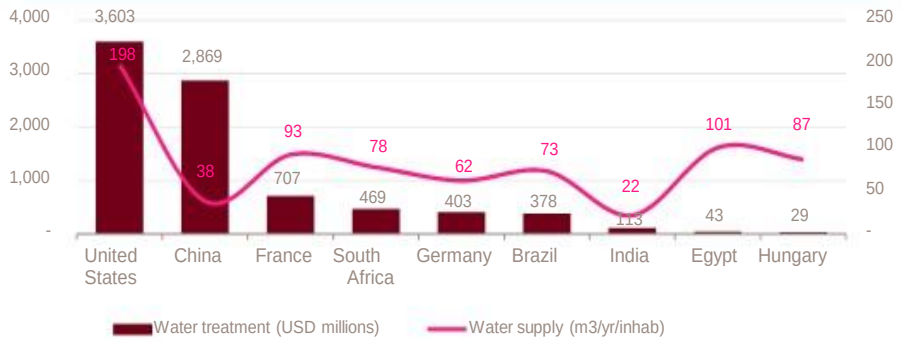
Water treatment infrastructure includes both treatment facilities and the water mains that link up the different treatment plants. They accounted for USD 17 billion in global expenditure in 2010 or 10% of total investment in infrastructure. Investment in water treatment is a function of (1) the quality of drinking water as defined by the national regulations of the area concerned as compared to the quality of the raw water, and (2) the adequacy of the treatment infrastructure.

Drinking water standards concern thresholds for certain harmful substances that are likely to be present in water. These thresholds are designed to protect consumers' health. In 2006, WHO guidelines listed approximately 100 criteria - elements and concentrations - that need to be tested and benchmarked when measuring the safety of drinking water. The European Union has defined 63 parameters for testing water quality.

Water quality establishes the degree of treatment required by the captured resource: the purer the resource, the less that needs to be invested in the treatment infrastructure. Germany has several sources of high quality raw water, accordingly the pumped underground water fed into the distribution system is subject to relatively little filtration or chlorine treatment. Other countries with more polluted surface water have much more extensive water treatment facilities.

25. Source: Al-Mohannadi, 2009

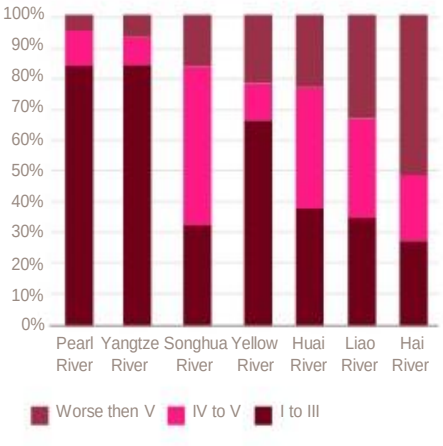
Figure 24: Water supply and investment in water treatment per inhabitant, 2010



Based on these figures, three countries stand out: China which has a particularly low ratio of "investment in treatment facilities to water supply", and the United States and Hungary which occupy first and last place, respectively, in terms of total investment.

China, which holds 6% of the world's total water resources, has a real level of water resources per inhabitant that is four times lower than the worldwide average. According to the Chinese Ministry of Water Resources, 24% of Chinese water can only be used for agricultural or industrial purposes, nearly 21% is totally unfit for consumption and 55% can be used for everyday consumption after treatment (2008 data).

Figure 25: Quality of water from Chinese river basins [26]



The United States has the fourth largest renewable water resources but it has to contend with nitrogen pollution from agriculture, pollution from heavy metals used in industry and an ageing infrastructure. Water consumption leads to overexploitation of resources which automatically pushes up water treatment costs. In 2007, USD 67 billion in additional investment in water treatment was estimated to be required over the next 20 years.

In the case of Hungary, 96% of its surface water reserves come from adjoining countries and 46% are affected by cross-border pollution. The country favours groundwater for meeting household drinking water needs (95% of requirements), however 42% of the population[27] receives water that does not comply with the standards laid down in EU Directive 98/93 and 27.4% of the population receives water that contains chemicals such as arsenic and nitrates that are likely to have a direct health impact.

26. Chinese Ministry of Water Resources, PRC

27. International Office for Water - Hungary, 2007

4.1.1.2. Distribution

Distribution involves getting drinking water from post-treatment storage locations to consumers. The distribution network comprises the infrastructure, water mains and pumps that supply local consumers. All networks are subject to wear and tear and require investment to renew facilities. In 2010, network investment expenditure totalled USD 43 billion, including USD 12 billion for extending existing networks.

Aside from geographical considerations, water distribution costs depend on the standard of infrastructure equipment, infrastructure building costs and the volume of water to be transported.

Analysing the structure of investment in water distribution highlights two main types of situation. First, countries where network renovation/ maintenance expenditure is very high due to the cost of maintaining the existing infrastructure (Germany, the United States, France and Egypt) or renovating outdated, substandard infrastructure (Hungary and China). Second, countries that suffer from infrastructure deficit that wish to develop their distribution capacity and to provide better coverage for their populations (India, Brazil and South Africa).

Figure 26: Investment in water distribution by type of cost, 2010

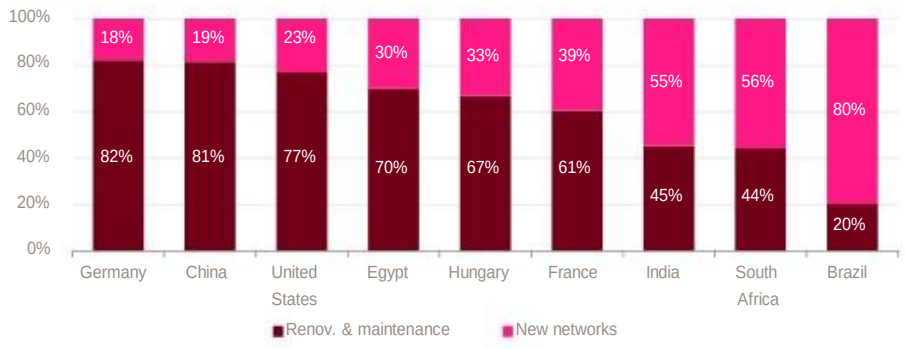
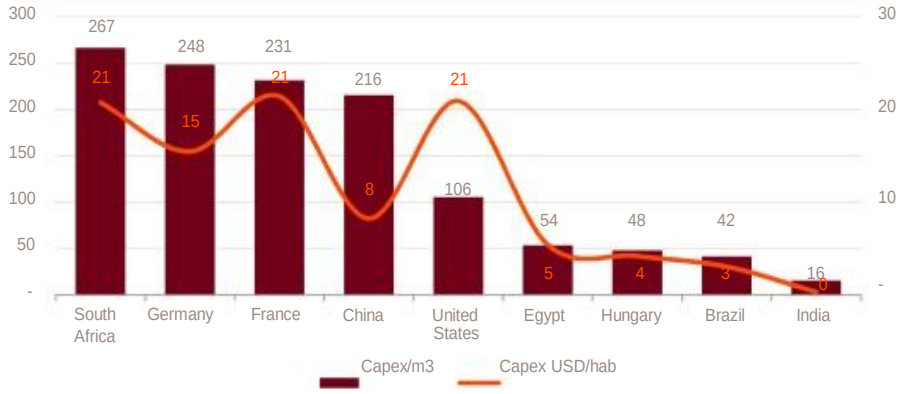


Figure 27: Investment expenditure per inhabitant, 2010



Average investment per cubic metre highlights the situation of the United States where average cost per cubic metre is less than half of that in the developed countries in our sample. This is down to the high level of consumption of the population, i.e., between two and three times what it is in Germany and France.

As regards average investment per inhabitant and per cubic metre, two trends emerge:

- an average cost of between USD 15 and USD 21 for developed countries.

France, the United States and Germany all have distribution networks built over longer periods than those in developing countries whose distribution networks are already in place. As pointed out previously, they are no longer actively equipping their infrastructure so investment in the water distribution system will increase only moderately. Average cost per inhabitant will not increase very much over the coming years.

- emerging and developing countries where the average cost ranges between USD 0.30 and USD 5 per inhabitant.

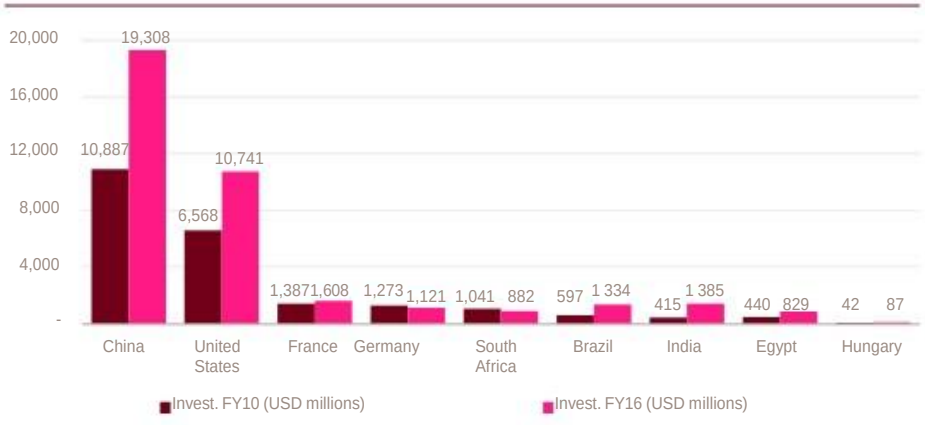
The decrease in the investment per cubic metre curve highlights differences in terms of network organisation and investment to be undertaken in the long term. This is due in particular to the concentration of networks in urban and peri-urban areas. The network has not been extended into rural zones in either Brazil or India so investment per inhabitant may remain at a fairly low level. In the case of Egypt, the dispersion of the population around the Nile and its tributaries - which are the main source of raw water - also limit distribution costs per inhabitant and per cubic metre.

Outlook

Declining requirements will lead certain countries to gradually reduce their investments in distribution infrastructure. Germany, whose population could fall by 12 million between now and 2060, should follow this pattern and cut expenditure by an average of 2% between 2010 and 2016. South Africa with its stated goal of more efficient infrastructure management should also cut back its investment slightly.

India, China, Brazil and Egypt have committed to various programmes to develop their basic distribution capacities and enhance network service quality.

Figure 28: Investment in water distribution, 2010 vs. 2016

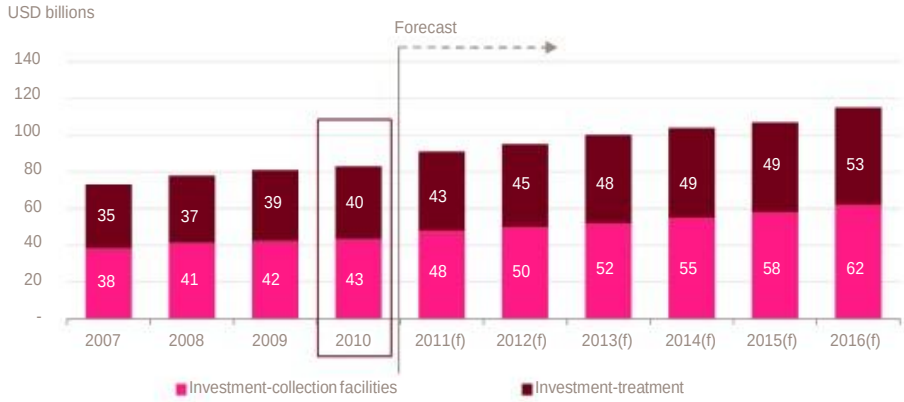


4.1.2. Wastewater sanitation

Sanitation involves collecting and treating wastewater. It is a key issue in the water cycle because wastewater that is collected and/or treated is discharged back into the environment where it again affects water quality.

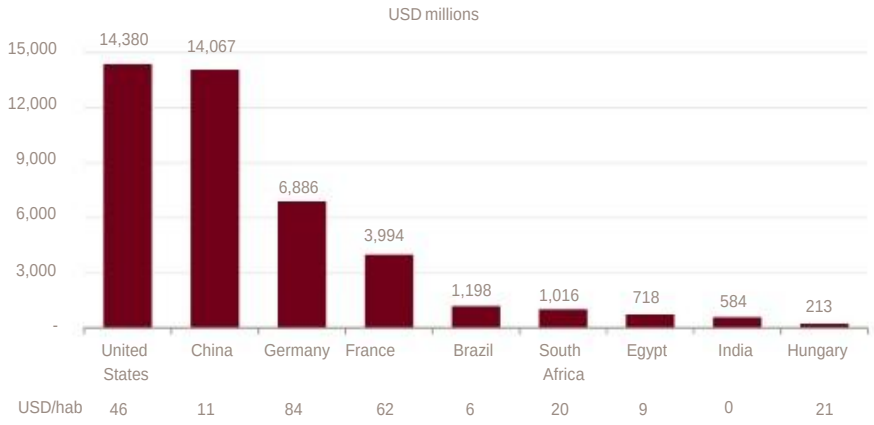
In 2010, USD 83 billion were invested in building, extending and renovating wastewater collection and treatment facilities and this total is set to increase by a further USD 32 billion by 2016.

Figure 29: Global investment in sanitation infrastructure, 2010



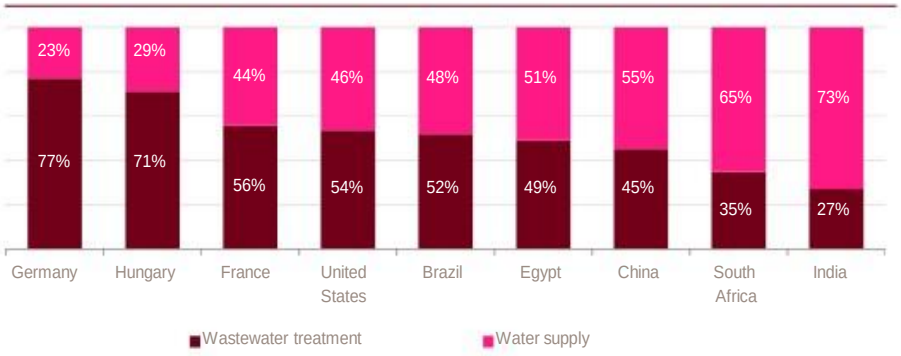
While China invested more than developed countries in absolute terms, these developed countries are still ahead in terms of sanitation practices. This is borne out by investment per inhabitant: the developed countries, and notably the Western European countries and the United States, invest more in wastewater treatment with amounts equal to or exceeding USD 46 per inhabitant in 2010.

Figure 30: Investment in wastewater sanitation, 2010



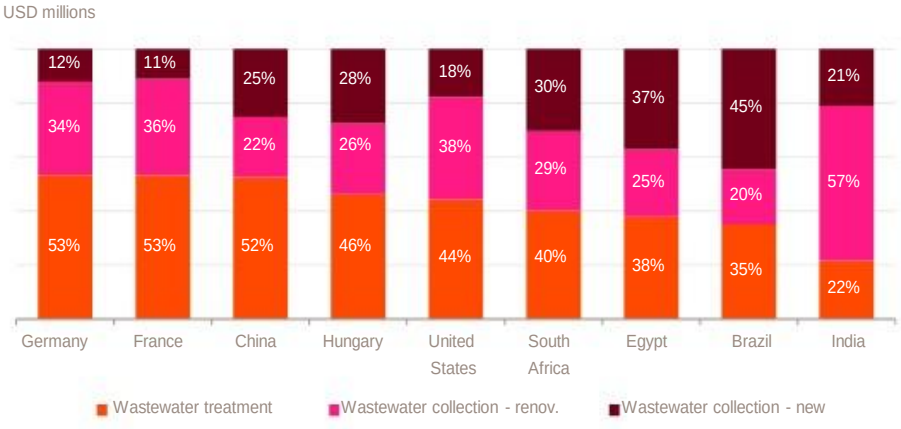
In 2010, the total amount invested in sanitation infrastructure was greater than that invested in water supply infrastructure in the case of the United States, Germany and France. The key objective of emerging and developing countries is to cover the demand for drinking water among their own populations and, if possible, invest in both activities. This is especially true in Brazil where sanitation is a priority in urban areas, and even more so in Egypt, where government regulations aim to protect the waters of the Nile.

Figure 31: Investment in the water sector by type of activity



In emerging and developing countries, wastewater collection facilities are the biggest cost involved in sanitation and account for at least 60% of investment in Brazil, India and Egypt.

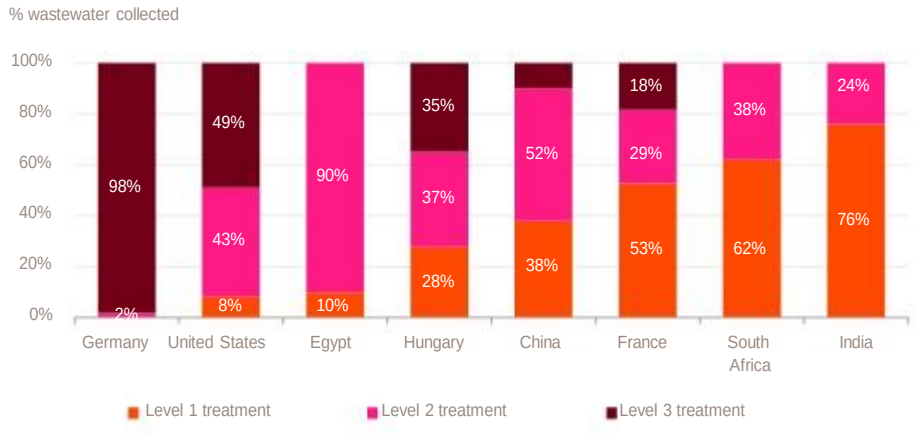
Figure 32: Structure of investment, 2010



The level of treatment is related to the degree of pollution of the wastewater collected and the standard of infrastructure equipment. For example, emerging and developing countries such as Egypt, India or South Africa, have invested in the first two levels of treatment.

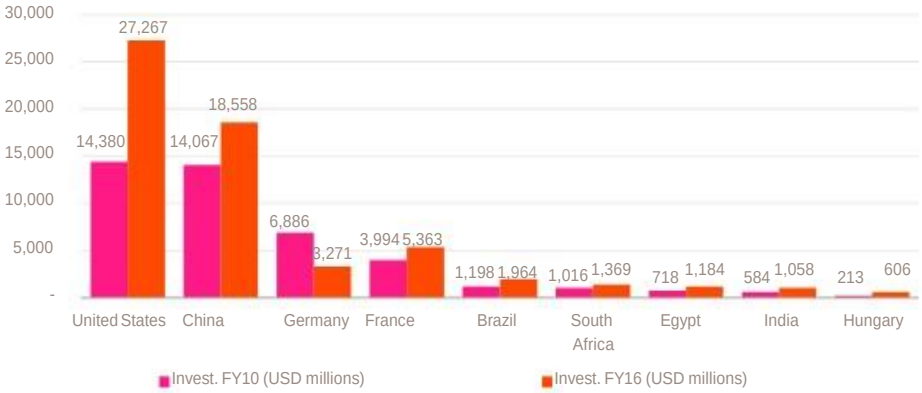
The United States has a more elaborate infrastructure in line with the degree of pollution of its wastewater. This trend has already been followed by China and will soon be followed by India.

Figure 33: Level of collected wastewater treatment, 2010



Countries that are set to invest massive sums in sanitation infrastructure include China which already has a shortage of wastewater collection and treatment facilities outside of its major cities and results in 800 million Chinese people that only have access to poor quality water.

Figure 34: Investment in wastewater sanitation, 2010 vs. 2016

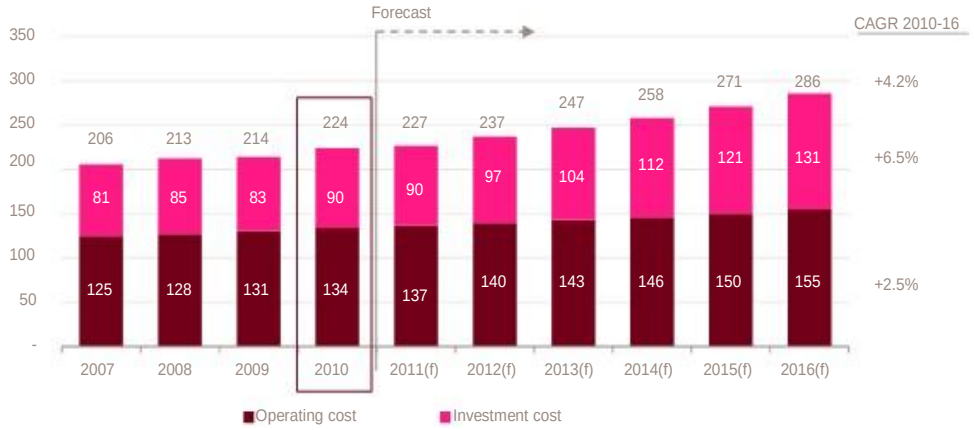


4.1.3. Summary of the cost of water

4.1.3.1. Supply of drinking water

The worldwide cost of providing drinking water was estimated at USD 224 billion in 2010 and is set to reach USD 286 billion by 2016, i.e., an average increase of 4.2% per annum between 2010 and 2016. About 60% of this amount relates to the cost of operating the different infrastructures which will rise by 2.5% over the same period, i.e., the same rate of increase as that noted since 2007 (CAGR of 2.3%). Investments should increase by a higher rate over the same period (by a CAGR of 6.5% between 2010-2016).

Figure 35: Summary of the cost of supplying drinking water (in USD billions)



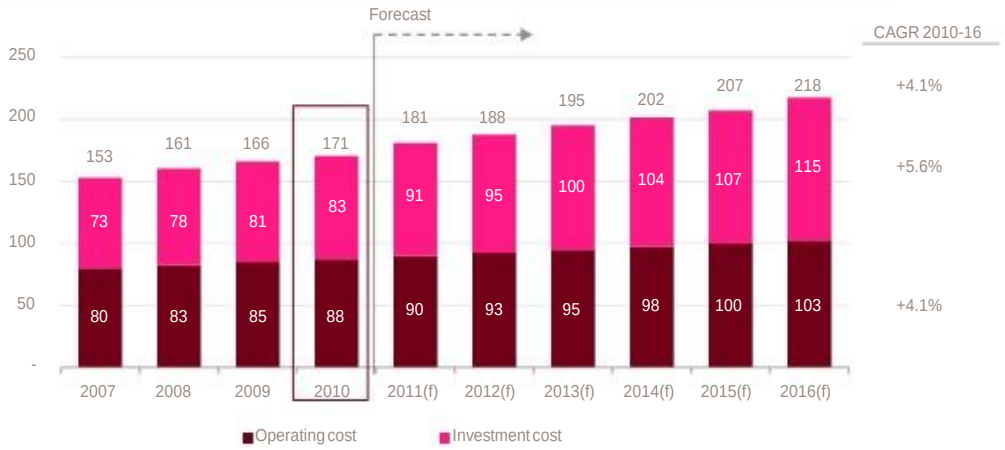
The increase in investment will be in emerging, developing and Eastern European countries with major equipment requirements. According to the same study, India, China and Brazil will increase their investment by 22%, 11%, and 13%, respectively with a particular focus on boosting their withdrawal and distribution capacities.

Between 2010 and 2016, France, Germany and South Africa will invest relatively little - or even disinvest - in order to calibrate their infrastructures to bring them into line with demand: falling population in Germany (average decrease of 0.1%) and falling consumption in France and South Africa.

4.1.3.2. Wastewater sanitation

The cost of wastewater sanitation is estimated at USD 171 billion and there is a fairly even 50/50 split in the cost structure between operating and investment costs. Between 2007 and 2010, investment costs increased by 4.4% on average which was more than the corresponding 3% average increase in operating costs. According to the GWI's 2011 report, investment costs worldwide will reach USD 115 billion by 2016.

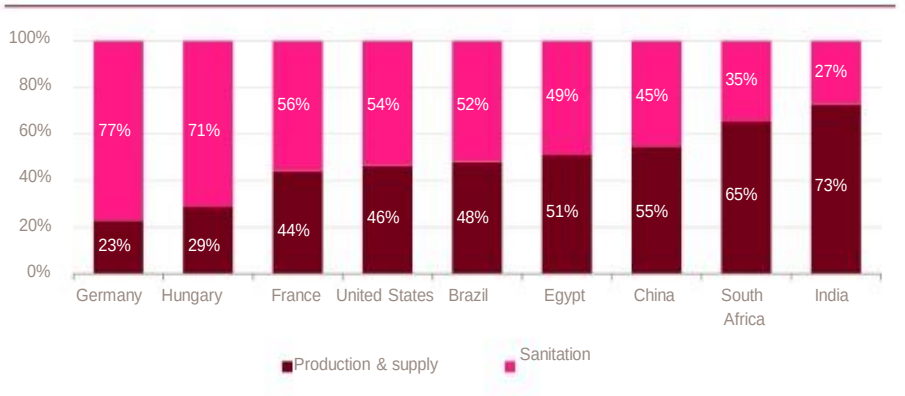
Figure 36: Summary of wastewater sanitation costs (in USD billions)



There is more investment in sanitation in developed countries and this trend should continue with annual investment projected to rise in France and the United States by 5% and 9%, respectively, between now and 2016.

Emerging and developing countries will boost their sanitation capacities and particularly their wastewater collection facilities (increases of 13% in Egypt and 6% in China) and treatment infrastructures (increases of 21% in annual investment in India, 5% in South Africa and 9% in Brazil between now and 2016).

Figure 37: Investment in production and supply of water vs. investment in sanitation, 2010



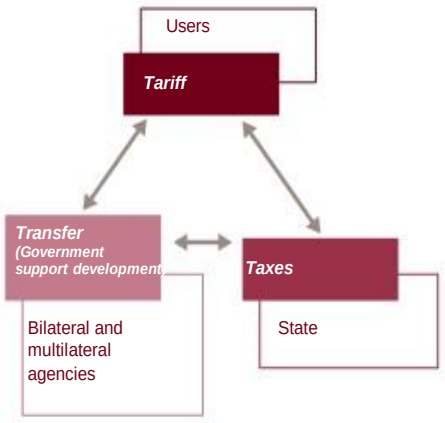
4.2. Price, cost recovery and financing of services

Meeting water demand for populations and industry is part of a complex cycle involving overlapping activities: water withdrawal, treatment and distribution in the upstream phase, and collecting and treating wastewater in the downstream phase. Operating the cycle and developing adequate infrastructure requires the involvement of many different players, including central and local government and industrial players. In the absence of adequate existing infrastructure, levers need to be developed that make it possible to raise the necessary funding for setting up, renovating, operating and maintaining the different facilities.

Pricing the different services is fundamental to financing costs but we will also see that pricing in the water sector is a complex notion and that comparing prices in different countries or different cities is a tricky business. Depending on the country, legislation or the socio-economic environment, price may be used to recover either a small part or the totality of investment and operating costs.

The 3Ts Rule (Tariffs, Taxes, Transfer), presented below illustrates the balancing act that each national, regional or local system deploys in an effort to finance operating and investment costs.

Figure 38: The 3Ts



4.2.1. Balancing arrangements in the water sector

4.2.1.1. The role of public authorities in the water sector: providing oversight, regulation and investment

Public authorities and public administration play a key role in the 3Ts. In a system where there is no international aid, the portion not paid by the user will be paid by central or local government out of taxes. In a pricing system in which the consumer is not the only source of funding, the arrangement is not based on the complete recovery of costs out of rates charged to individual customers. Charging a reduced rate for the lowest band of water consumption creates a subsidy for households with a low rate of consumption. A banded pricing system, free subscription or giving a certain volume free of charge may be provided through price-based cross-subsidies, i.e., subsidisation by other consumers or a public subsidy paid for by the taxpayer.

Public authorities also decide whether water rates are a local or a national cost. In countries that have opted to provide water free of charge, such as Libya, Turkmenistan or Iraq, all of the costs inherent in providing a water service are borne by the taxpayer. In Egypt or Saudi Arabia, water is considered a vital public good and costs USD 0.07/m^3 and USD 0.03/m^3, respectively. [28]

In South Africa, the water sector is kept afloat by central government subsidies. Programmes to promote access to water and sanitation for the poorest populations are the principal recipients. Once basic facilities have been set up, prices are too low to improve the service or merely keep it going, so the Federal Government has to step in.

In France, water utilities provide oversight and investment. Their mission is twofold: (1) optimising the use of water resources, combating water pollution and protecting the aquatic environment; and (2) coordinating the related water planning and management strategy ("SAGE" and "SDAGE" plans). User fees are treated as financial aid to subsidise new investments in the network and treatment facilities.

28. Ministry of Water and Electricity, Saudi Arabia (2009)

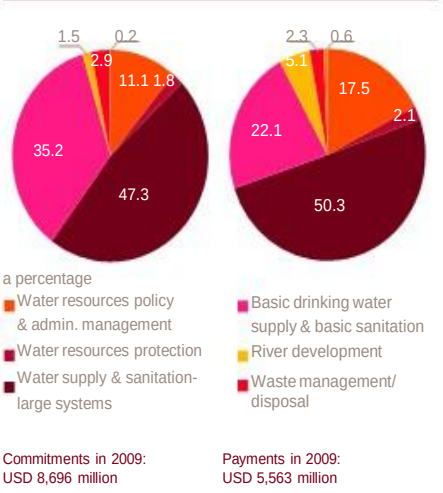
4.2.1.2. Transfers in countries with major infrastructure requirements

The OECD's Development Assistance Committee (DAC) defines aid to water and sanitation as including water resources policy, planning and programmes, water legislation and management, water resources development, water resources protection, water supply, sanitation and education and training in water and sanitation.

In 2009, promises of aid for water and sanitation projects totalled USD 8.7 billion, of which USD 5.6 billion was pledged by Japan, Germany and Spain who are the principal donors.

This aid is mainly used to (1) build sanitation networks and (2) develop basic services providing access to water and sanitation.

Figure 39: Pledges of aid and aid payments by domain, 2009



Commitments in 2009: USD 8,696 million

Payments in 2009: USD 5,563 million

4.2.1.3. Pricing water services for the consumer

Pricing of water services is the system for recovering costs - both operating and investment costs - from the consumer. Pricing is determined not only by the standard of local infrastructure equipment which is related to the level of development of the territory in question, but also by the public authority's water management and financing strategy. These factors are interdependent and part of the overall balance. Pricing will cover either all or a portion of fixed costs, deemed to be the cost of the assets, and variable costs, i.e., the costs of operating the infrastructure.

" Complete cost recovery" and "sustainable cost recovery": a "fair price" for water?

The notion of cost recovery is bound up with consumers' ability to bear the cost of water services which in turn depends on household purchasing power. A "complete cost recovery" pricing system charges the totality of investment and operating costs back to the user. Germany and Denmark cover the costs of their water services using this system and France's system is very similar.

The GWI's study of water prices in over 200 cities worldwide clearly shows that the lowest prices are to be found in emerging and developing countries (less than USD 1 per cubic metre on average) in spite of the actual cost of water services. But a system of providing water completely free of charge is difficult to reconcile with optimal resource management. We should note that it is not water in itself that has to be paid for but the services to provide quality water and collect and treat wastewater.

The notion of "sustainable cost recovery" implies setting a contribution rate that is compatible with average household income. This system cannot be effective without a parallel system of subsidies for households with insufficient resources to pay for the totality of costs. This approach seeks to foster awareness among users and encourage them to adopt a responsible attitude.

While a pricing system may have complete cost recovery as its long-term objective, "sustainable" recovery proves to be more suitable in countries where public financing of water and sanitation services favours access to a vital service for the poorest populations [29]. External aid (from bodies such as the European Development Fund, the World Bank or the EIB) allows certain countries to offer more affordable prices. In 2005, the portion of the income of median households spent on water was estimated at 2.8% in Sub-Saharan Africa, 2% in North Africa and the Middle-East, and 2.9% in Latin America [30].

In industrialised countries, water charges are set at 3% of income for poor households. In other countries this threshold is set at 6% [31]. However, the real picture is a contrasting one that reveals major disparities: the portion of income spent on water of the poorest 20% of households is 3% in Guatemala, 5.2% in Paraguay and Mexico, and up to 11% in Argentina, El Salvador and Jamaica. [32]

Although excessive prices will have adverse social impacts on consumers, if prices are too low, this will lead to a rapid deterioration in the infrastructure. If pricing does not generate sufficient revenue to invest in or maintain the network, this will lead to an inexorable deterioration in the quality of the service provided to users and make them all the more resistant to any proposed price increases.

Figure 40: Water infrastructure decline cycle

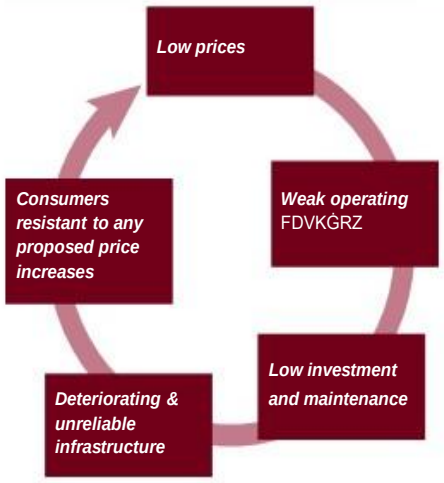
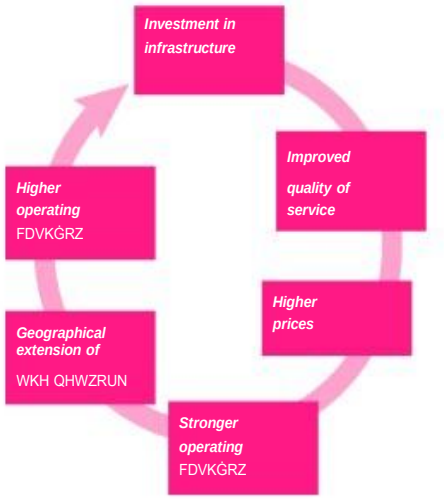


Figure 41: Water infrastructure improvement cycle



29. Managing Water for All: an OECD Perspective on Pricing and Financing, OECD, 2009
30. Kristin Komives et al. "Who benefit from utilities subsidies?", World Bank, 2005
31. De l'eau potable a un prix abordable : La pratique des États, Henri Smets, 2008
32. See Fig. 1.12. PNUD HDR 2006, Gasparini et Tornarolli, 2006)

Different pricing systems to reconcile public good and economic sustainability

Pricing systems may be applied at national, regional or local level and be classified as follows:

- Proportional and progressive pricing systems that use a banded pricing system indexed solely to water consumption. A number of countries and regions have developed progressive pricing systems including Portugal, Spain, Italy and the Brussels capital region.
- Social pricing systems or targeted social aid based on both consumption and certain user socio-economic characteristics. In the Flemish and Brussels systems, the price of water only affects a limited number of people and is frequently financed by solidarity between users, i.e., a mechanism of cross-subsidies.
- Flat-rate pricing systems not correlated to consumption based around socio-economic characteristics such as the nature, size or value of consumer dwellings.

4.2.2. Practices based on the 3Ts and emergence of water economic models

Various different models that draw on the 3Ts appear to be emerging, based in particular on the standard of water infrastructure and sanitation equipment.

4.2.2.1. Countries with a historically well-developed infrastructure

Most developed countries have well-equipped infrastructures so the biggest items of expenditure are operating, maintaining and renovating the water infrastructure.

Countries such as England, Germany or Denmark leave users let pay for operating expenditure and to finance future investment in infrastructure. Germany uses a national system which is incorporated into the tax system of each state (Land). Prices are set by local authorities and must cover all operating, investment and maintenance costs (infrastructure, distribution networks and wastewater collection facilities). In 2009, over 95% of drinking water and sanitation costs were paid for by users, i.e., €1.88/m³ and €2.19/m³, excluding VAT.

In the United States, the operating surplus from water services is not enough to finance capital investment. In 2007, the investment required for water services was estimated at nearly USD 321 billion over 20 years.[33] Investment projects are financed out of subsidies or low-interest loans. The ARRA Amendment, i.e., the American Recovery and Reinvestment Act of 2009, earmarked nearly USD 6 billion to finance water infrastructure and sanitation projects, while USD 1.4 billion worth of subsidies and loans went to the department that runs the agricultural water and wastewater service. [34]

In France, 100% of the population has access to the domestic water service and 85% is hooked up to a wastewater sanitation system. Water services, sanitation and taxes represent 42%, 36% and 22% respectively, of the price. [35] The overall average price is €4.24/m3 and 100% of operating expenditure (water supply and sanitation) is recovered from consumers. Infrastructure financing (water supply and sanitation) is mainly the prerogative of the public authorities even though these costs are included in the price of water: central and local government accounted for 41% of revenue and 66% of investment undertaken in 2008, against 40% and 13% for private operators, and 19% and 21% for the water agencies. [36]

It should also be noted that fixed costs which are traditionally very high in the water sector, fall markedly when the infrastructure has been nearly or totally depreciated and correctly maintained.

33. 2007 Drinking Water Infrastructure Needs Survey and Assessment, EPA report to Congress 2009
34. EPA, Clean water and drinking water state revolving funds allocation chart, 12 March 2009
35. Adapted from BIPE/FP2E, 2008 and Barucq et al., 2010
36. Adapted from BIPE/FP2E, 2008 and Barucq et al., 2010

4.2.2.2. Developed countries with a more recent infrastructure

In Italy and Spain, costs recovered from users represent only the costs of operating water services and do not cover equipment requirements.

In Italy, 95% of the population has access to the domestic water service and 85% is hooked up to a wastewater sanitation system. The average price corresponds to 0.7% of the average salary of a three-person household. The average price is €1.29/m^3 and is projected to reach €1.57/m^3 by 2020. It differs depending on the region and the pricing system used. Almost 34% of Italian users are covered by the CIPE rate which averages out at €0.98/m^3 and only covers operating expenses; 66% of users are subject to "Galli Law" rates and pay €1.39/m^3 on average which covers operating expenses, asset depreciation expenses and the return on productive investment. Investments are partially funded by local authorities or central government [37] and the current caps on SII and CIPE rates mean that future needs are not covered. These are estimated at over €60 billion by the ANEA and only 10% of this amount will be funded by the public authorities.

Given its current economic situation, Spain is largely dependent on European Union subsidies and low-interest loans. EU funds are mainly allocated to the east of the country and to regions with major infrastructural deficit. In 2009, one cubic metre of water cost €1.50 on average, or €1.40 for domestic consumers and €1.81 for industrial users. However, customer revenue does not cover all of the costs of operating the water service. The key pricing issue remains agriculture which accounts for 70% of total water consumption. The current concession arrangement allows farmers to avail of very low water rates - less than €0.50/m^3 according to the Ministry for the Environment - while certain farms also get water from illegal boreholes.

4.2.2.3. Countries with major infrastructure requirements: emerging and developing countries

Emerging countries have to contend with a number of water-related challenges. The volumes of water provided to households and industry and the volumes of wastewater treated need to keep pace with economic growth. The standard of services in countries like China, Brazil or India remains well below that provided in developed countries. In spite of investment levels that exceed those of France, Brazil or Egypt, China only provides 104 litres/per capita/day compared to 264 litres in France, 199 litres in Brazil and 287 litres in Egypt. Both in terms of upstream and downstream processes, the needs of the three major emerging economies are and will continue to be enormous over the next 15 years. In South Africa, domestic, commercial and industrial water rates are too low to cover operating and investment expenditure. The country has a vast system of federal subsidies that help to keep the whole water sector going. The Development Bank of Southern Africa estimates that drinking water infrastructures are 51%-funded by government subsidies, 30% by local taxes and 19% by various private sector loans. Local municipalities are highly dependent on central government and they are discouraged from putting up prices so as to favour access to water for the poorest populations.

For many developing countries that do not have access to the same type of budgetary resources, help comes in the form of subsidies and loans granted as part of aid development programmes by supra-national bodies such as the World Bank, the European Investment Bank and various multi-lateral regional banks.

37. Utilitatis and ANEA (2009)

Section V - Pointers towards tomorrow's solutions

Achieving universal coverage and meeting the needs of human beings more generally, i.e., not just in terms of domestic water, but water for industrial and agricultural purposes as well, will depend on the progress made in a number of different areas. In the present circumstances, three major areas need to be targeted in order to achieve these objectives or to promote solutions that will help to achieve them: governance, technological innovation and financing.

5.1. Governance

Governance has been a sort of magic word that has been bandied about the water sector over the past fifteen years. Governance covers all of the measures, regulations, decision-making bodies, information and oversight mechanisms that help control a State or a public or private, regional, national or international institution or organisation, and make it function more effectively. Consequently, it concerns principles that have to be implemented on a global scale and this is especially difficult given the highly fragmented structure of the water sector, run by hundreds of thousands of municipal, regional or national structures.

5.1.1. Transparency

When discussing governance, the first notion that comes to mind is transparency. This concerns both the public sector and investment capacity, the private sector and price setting as well as the information to be provided to consumers.

In the public sector

The public sector dominates the global water and sanitation industry and produces very mixed results, ranging from some quite remarkable performances in a number of developed and less developed countries, to poor or even awful results in countries in transition or developing countries due to a lack of resources, training or performance incentives. We also note the existence of opaque practices leading to corruption that usually comes in two forms:

- corruption in business relations with the private sector: this concerns in particular the awarding of delegated management contracts or investments in public entities in murky circumstances in exchange for large sums of money (personal enrichment, use of funds received for other purposes) that are not subsequently reinvested in the water sector,
- corruption in public procurement contracts concerning investment in water and sanitation projects where, even though regulations do exist, exceptionally high prices are paid for equipment or treatment facilities generating unjustifiable costs. These practices arise from arrangements to inflate suppliers' profits and pay secret commissions, and culminate once again in money being taken out of the water sector.

The first type of corruption involves money from the private sector whereas the second type concerns resources taken from the public sector that have a negative impact on the price of water and use part of public funds without creating any value for the sector. This type of behaviour is frequently uncovered only after inspections and audits have been conducted and it is usually too late to recover the money. In other cases such practices are well known but never actually come to light. Obviously, controls need to be performed as far upstream as possible but we can clearly see the enormous amount of work that remains given the sheer number of water services throughout the world even though, thankfully, not all are plagued by the these types of problems. Consequently, the optimisation of financial resources earmarked for investment in the water sector is contingent on generalised application of these procedures and controls.

In the private sector

The private sector has mainly been confronted with problems over the transparency of prices charged for water. In the mid-1990s, certain countries - albeit politically risky ones - managed to achieve an internal rate of return on investment in excess of 30%. Similarly, certain long-term concession operators accumulated provisions for infrastructure renewal over time without actually using the provisions or transferring them to the delegating authority. These charges were borne by consumers but were not reinvested in the water sector because they were used to finance other non-water-related businesses or acquisitions.

We also note that private operators have been able to transfer corporate expenses to concessions that they operate in order to justify higher costs, even though the costs in question are not related to water production or distribution or the collection and treatment of wastewater.

But here again, this lack of transparency was only brought to light subsequently by controls and audits and it was impossible to recover amounts that had been used for other purposes. These substantial lost earnings also served to tarnish the image of the private sector. On a related note, it may be a cause for concern to see investment funds focusing on the water sector mainly for the purpose of maximising their short-term earnings-per-share ratio with no interest in creating long-term value for the water sector itself.

For consumers and citizens

These examples demonstrate that we are confronted with a problem of non-existent or totally insufficient financial information and with new models of cooperation between the private sector and the delegating authorities when a service is put out to delegated management. Everyone agrees that the water sector is a global commons, vital for the survival of humanity, and cannot be treated as a speculative commodity for maximising profits to the determinant of the community. Any recourse to private sector experience and know-how must be based on balanced earnings arrangements that maintain incentives to generate profits to be shared between private operators and the delegating authorities. It is therefore essential that water users are informed not only of factors affecting water quality, but of financial indicators such as costs and rates.

5.1.2. Decision-making policies and timeframes

Another aspect of good governance is bound up with political considerations: politics and the water sector do not have the same time horizons. In many parts of the world, politics is in thrall to emotion and the urgency of the moment. Certain media bear their fair share of responsibility for manipulating public opinion and exploiting sensationalism for commercial gain. Politics is forced to continually adapt - and perform u-turns - just to keep pace with opinion polls and electoral trends. All too often such considerations are bound up with the short-term and discontinuity whereas water policy needs continuity and a long-term focus. Clearly, decision-making horizons are not the same for politicians and for the water sector.

In many, countries, water has suffered from being used as a “political football”, especially during local or national elections. Paradoxically, we note that some autocratic regimes obtain better results than countries with changing democratically-elected governments precisely because they are able to implement long-term, continuous policies. In countries with more democratic national or local systems, investment programmes are sometimes deferred because of political wrangling, leading to excess costs that could have been avoided. This problem has even greater repercussions in the water sector where financing has always been difficult to come by.

Similarly, in certain emerging or developing countries with undemocratic regimes, water is not always a priority and certain “unenlightened despots” may prefer to build other types of more visible infrastructure - an airport or a motorway, for example - as monuments to their own glory, rather than water or sanitation networks which will be much less visible.

Regardless of what region we refer to, the water sector needs both time and space to develop. It is bound up more with geography, whereas politics is more concerned with history and this hiatus hampers development in the water

sector. Nevertheless, the political establishment - regardless of its allegiances - should be capable of agreeing upon a long-term strategy, particularly for investment and financing the needs of the sector. We now need to focus on explaining the challenges and organising the relevant debates. It is vital to strive for a concerted approach that transcends traditional political rivalries in order to achieve convergence. Democracy should constitute not an obstacle but a lever for implementing coherent and satisfactory long-term water policies.

5.1.3. The right to water

The right of every person to have access to water has been the subject of much debate over the past decade. The right to water was finally recognised by the United Nations in July 2010 and has been reaffirmed since then at various conferences, however it really needs to be transposed into the legislation of each country before it becomes a legally enforceable right. Providing the resources to effectively implement the right to water is now an integral part of governance.

But what does affirming the right to water in a forum such as the United Nations actually mean if this affirmation remains a dead letter? The great challenge now lies in finding the resources in each region to satisfy this need and this will involve our ability to identify all people throughout the world without access to water either due to their distressed circumstances or distance from a source of drinking water. It will then be up to water companies, with the support of the legislator, to come up with solutions to enforce this right. They may for example devise indicators for tracking the manner in which the right to water is measured in different parts of the world and assess the progress that has been made in applying it.

More effective international water governance is therefore contingent on coordinating different countries by tracking indicators that ensure that the right to water does not remain simply an inconvenient declaration with no tangible effects for the worlds' most distressed communities.

5.1.4. Managing knowledge

Since the early 1990s, innumerable experiments have been carried out in the water sector by ministries, local authorities, operators, engineering firms, NGOs or international financial institutions. Regardless of whether they have been successes or failures, all may be leveraged to provide pointers for the future. The experiments focused on institutional organisation, regulation, pricing, bases of cost recovery, financially sustainable technical solutions or funding policies. The accumulated knowledge and experiments now constitute a considerable asset. However the related information is currently fragmented and dispersed in innumerable documents throughout the world.

New information technology has had a revolutionary impact that makes it possible to collate these various experiments and it would therefore be sound policy to identify and structure all of this knowledge in order to make it available to the greatest possible number of people. Setting up a large library or a virtual university devoted to water should be encouraged as this would bring together all available knowledge and experiments while helping to disseminate best practices. Leveraging this information should also help to avoid bad choices, gain time and generate major savings - a precious commodity in the water sector.

5.2. Technological innovations

Research and development and innovation have massive potential for devising solutions to:

- producing more in quantity and quality terms to meet growing needs;
- distributing and consuming a scarce resource more effectively;
- meeting the challenge of wastewater sanitation and safeguarding public health, the environment and the quality of the resource throughout the life cycle;

all at sustainable cost.

The task is to make progress in treatment technologies (drinking water, sanitation) and move distribution and consumption methods forward. The fact that water management is closely bound up with its local context contains both advantages and drawbacks (geographical and geological, socio-economic and cultural) and the essence of the challenge lies in tailoring dynamic, relevant solutions to a vast array of circumstances.

5.2.1. Water production: leveraging alternative sources of water - sea water or marginal-quality water

Although desalination of sea water remains a costly strategy (estimated at between two and three times the cost of treating surface water), it may become worthwhile in situations where there is sufficiently easy access to large quantities of sea water, major funding capacity to meet high operational costs and an absence of cheaper alternatives. In Israel, the state-sponsored desalination programme targets a production capacity of 750 million m_3/year by 2020. If it succeeds, desalination will become a major source of water for the country and contribute 22% of total water production in 2020 (Source: GWI). Other countries and regions that are seeking to develop desalination programmes include certain Gulf States (Saudi Arabia, United Arab Emirates), California (USA) and Australia.

For mature technologies, expected progress is linked to improvements in energy efficiency, upkeep and the useful life of equipment (particularly membranes) culminating in a cheaper desalination process with a higher output. Reducing the environmental impact is also crucial in terms of both energy (optimal consumption practices and use of renewable energies) and the dispersal of brine. Certain nascent technologies would also appear promising, such as membranes that use nanotechnologies to attain the required level of molecular porosity, or biomimetic membranes with powerful filtration mechanisms.

Reusing wastewater also appears to be a solution for the future given the potential resources (everywhere water is consumed, there is wastewater) and numerous applications.

At the present time, the main uses for recycled wastewater are for the irrigation of agriculture (approximately 30% [38]) and gardens (20%), and industrial recycling (approximately 20%: cooling systems, process water, heat source). These are followed by uses that seek to preserve the environment and replenish reserves (approximately 10%: preservation of wet zones and replenishing lakes and ponds, replenishing aquifers for storing water, and naturally treating water). Finally, there are domestic and municipal uses covering both non-drinking water (fire fighting, air conditioning, car washing) or drinking water (reincorporation directly into the drinking water system directly or indirectly upstream into the reservoirs that feed this network). There is still a major psychological barrier regarding the reutilisation of wastewater in drinking water for human consumption.

Projections bear out the potential of agricultural and industrial uses for recycled wastewater, but quality requirements for treated water used for industrial purposes are moving closer to those that apply to urban and domestic uses. The most promising solutions would appear to be three-step treatments (ultra-filtration followed by reverse osmosis and intensive disinfection using UV disinfection, for example) and other advanced tertiary treatments that deliver high-quality water that can be used to meet industrial and urban demands. Consequently, we note that membrane filtration innovations (in terms of energy use and membrane design) have been and will continue to be of benefit in both desalination and the reutilisation of wastewater.

5.2.2. Efficient and increasingly flexible distribution combined with intelligent consumption

In developed countries, particularly in urban areas, innovations should ensure that ageing networks are efficiently maintained. Optimal use and extending useful life are the key issues. There are two types of solution. First, solutions that make it possible to plan and anticipate what will happen to networks by analysing and modelling their behaviour in terms of materials and environments. Second, we note innovations in the technical upkeep of buried networks that are difficult to access which enhance leak identification and defouling processes.

The gradual installation of intelligent computers makes it possible to track consumption in real time by remote meter reading. This will enhance the detection of leaks and abnormal consumption and will eventually make it possible to establish consumption patterns (for both domestic and industrial users) with a view to more efficient resource management.

In rural and urban areas, the focus is on the distribution method, particularly network sizing. Possibilities being explored consist in the deployment of dynamic modular solutions at a reasonable cost (decentralisation of catchment areas into small units for a more local basis of distribution, mobile desalination units).

5.2.3. Towards "waste-to-energy" sanitation

Optimising sanitation techniques depends on reducing energy consumption in the key activities (pumping, aeration of tanks), reducing consumption of chemical reagents and enhancing purification yields for greater efficiency in terms of the initial role of water purification plants, i.e., cleaning wastewater and discharging it back into the natural environment. The presence of endocrine disrupting compounds and pharmaceutical residues in wastewater represents in itself a major challenge over the coming years. Furthermore, the most promising developments are mainly those that will soon make it possible to

38. Source : GWI, Global water market 2011

recycle the entire output of wastewater treatment plants. The recovery and conversion of biogas (methane), excess pressure and sludge can already be harnessed to make facilities self-sufficient in energy, or even energy-positive. Nitrogen and phosphorous compounds can already be recovered and transformed into fertiliser and some research even holds out the possibility of recycling organic material as polymers for use in applications such as bioplastics. By harnessing these advanced processes, tomorrow's wastewater may also be recovered to help meet the needs of industry. So water purification plants are promised a future in which their activities will go way beyond their primary functions and they are set to become major sources of energy, water and biomaterials.

5.3. Financing

Financing comprises one of the three strategic development vectors for the global water and sanitation sector over the coming years. We already referred to the crucial importance of financing in the water sector in our March 2001 report entitled "Water - A World Financial Issue". In the wake of the Camdessus Report, "Financing Water For All" presented at the Kyoto Water Forum in March 2003, there was increasing awareness of the need to mobilise substantial financing on a global scale. Governments, international financial institutions, bilateral cooperation agencies or regional initiatives such as the European Union Water Initiative for the poorest countries have made it possible to raise considerably larger amounts over the past ten years.

Good governance and technological innovation should also avoid corruption and unsuitable technical choices and optimise the value created by such financing.

Financing in the water sector comes from three different sources:

- public sector financing;
- water rates, i.e., the price charged for water;
- official development aid.

And this is reflected in the lexicon of the 3Ts which we saw earlier (Tariffs, Taxes, Transfers).

Obviously, there is no single solution and financial strategies must be locally based and reflect the nature of the water project (urban or rural), the planned technology and resulting investment requirements, the number of inhabitants, local socio-economic circumstances and cost recovery potentialities. So very different strategies may be pursued within the same country depending on the characteristics of a given water/sanitation service.

Nevertheless, richer countries tend to use public sector financing and water rates to fund their projects. However, because of the afore-mentioned right to water of certain poorer sections of the population in such countries, support arrangements have been developed that involve delivering minimum annual quantities of water per capita free of charge for basic uses, i.e., drinking and washing water. In intermediate countries, in certain regions such as Central and Eastern Europe, or previously in a number of Southern European countries, big chunks of official development aid have been mobilised through structural and social cohesion funds. These are powerful levers for financing infrastructure development but unfortunately, not all intermediate countries enjoy the benefits of an integrated economic area. Financial strategies need to be found that incorporate differentiated pricing for different types of water use and are based on consumers' ability to pay (differentiating between different types of domestic consumer and industrial consumers, for example).

In developing countries, while better off consumers may be charged higher rates, other innovations may also be considered. For example, countries with a large tourist industry can develop specific pricing arrangements for hotels catering to well-off tourists. But other solutions clearly need to be devised in addition to official development aid, such as levying a consumption-based contribution on the water rates charged by richer countries that would finance infrastructure development in poorer countries. The Oudin-Santini Law has opened up possibilities in France but this mechanism probably needs to be applied at a more global level - e.g., in OECD countries as a first step - before gradually being extended as the per capita income of emerging countries increases. For example, a tax of €0.10 per m^3 in rich countries would represent a contribution of €18 a year, or €1.50 a month for a household that uses 180 m^3 of water a year.

But despite the small amount of the annual individual contributions involved, the political difficulties of implementing such a tax on a large scale should not be underestimated. Although most countries understand and advocate international solidarity, adopting and actually applying concrete measures can encounter fierce resistance and all too frequently good intentions fail to translate into firm commitments. The need to get resolutions adopted by a large number of countries at major conferences such as the World Water Forum leads to hybrid declarations based on the lowest common denominator that have very little effect. But sitting around waiting for the club of rich countries to agree on extending this type of mechanism would be wrong and merely a convenient excuse for doing nothing. Where financing is concerned, there tend to be many declarations and far fewer decisions and it is clearly the responsibility of each country to pursue this type of initiative. We may then hope for a positive "snowball effect" with enormous potential for financing access to water and sanitation in poorer countries.

Furthermore, the gradual application of principles of transparency based around indicators should boost the amount of financing that can be raised from international official development aid and the major multilateral financial backers. Obviously, this will be contingent on verifiable rules of good governance to ensure that all monies raised have actually been invested in the water sector.

Conclusion

Major changes have taken place over the past twenty years. Certain trends have emerged and much has been learned. A dynamic has been formed by the key players on the ground, backed by NGOs, associations, a multitude of private operators of all sizes and the "majors" and traditional public sector players, some of whom are tending towards PPP-type arrangements. Progress has definitely been achieved with the support of multilateral banks, bilateral aid and local development banks, as well as the boost that has come from stricter regulations and increasing awareness in corporate circles of businesses' "water footprint". And yet there is still much work to be done.

The big challenge remains investment capacity and harnessing sufficient sources of funding. Now more than ever, sustainable development in the water sector requires massive investments, not just in water and sanitation, but direct and indirect investment in rainwater harvesting, flood prevention and small and large dams/ reservoirs everywhere that water needs to be stored. Clearly, we are talking about several thousand billion euros in long-term investment. This effort also needs to be sustainable and while all the indicators suggest that it will be, the various programmes will need to harness formidable reserves of political will over a very long period.

Nobody believes that all countries everywhere are suddenly going to converge around this priority but what is essential is that each country accepts its responsibilities and that leaders emerge in all regions throughout the world in the hope of creating a broad front in terms of the solutions to be implemented. In many regions, development programmes hold out the promise of a regular supply of sufficient quantities of drinking water. But as we have seen, problems remain in applying genuine principles of good governance in the vast number of water services throughout the world and the benefits of investment in the water sector are numerous, highly dispersed and sometimes poorly evaluated: numerous and highly dispersed because they affect many different economic sectors, healthcare and protection of the environment; and poorly evaluated because it is difficult to measure the totality of benefits due to the complexity involved in correctly determining the revenue within an economic framework, and cost savings in terms of health and environment restoration work that would accrue from a sustained initiative in the water sector.

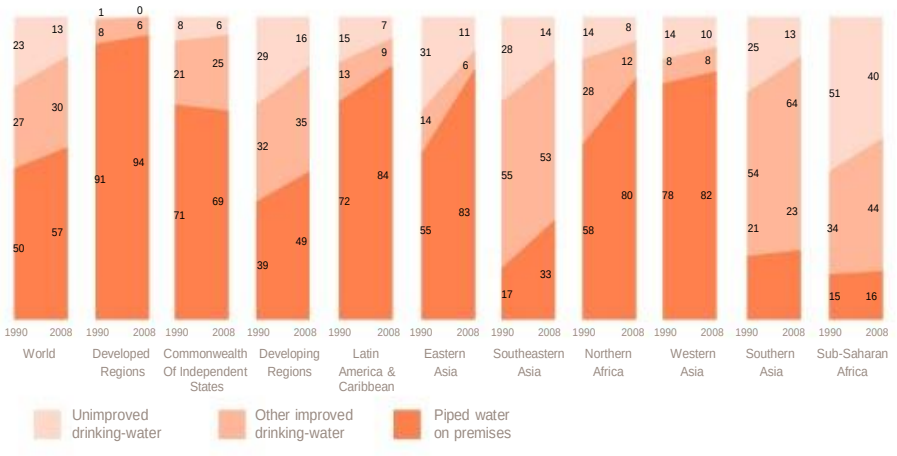
Consequently, the scale of the necessary investment constitutes a fantastic economic vector for creating value and jobs both locally and internationally. We tend to forget that such investments are powerful drivers for public works, the equipment industry and research and development. As the financial crisis continues to batter economies, the dynamic provided by investment in essential infrastructure can and surely must constitute a vector for sustainable development and progress in terms of medium- and long-term activities that generate revenue at both the micro- and macro-economic level.

Hence, this is an economic priority that needs to be resolutely reaffirmed as it will form part of a wealth-creating virtuous circle that will condition resource dynamics and the solutions of tomorrow. The principal expected benefit is none other than guaranteed access to water and sanitation for all.

Appendices

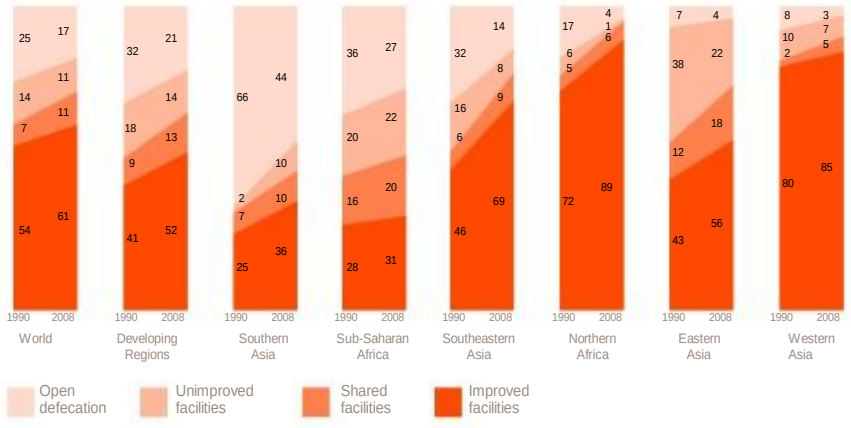
Global and regional trends

Figure 42: Global and regional trends in water supply, 1990 vs. 2008



The scale of water supply: global and regional trends, 1990 vs. 2008

Figure 43: Global and regional trends in sanitation practices, 1990 vs. 2008



The scale of sanitation: global and regional trends, 1990 vs. 2008

Sources: United Nations, Progress on sanitation and drinking-water 2010 update

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PwC is organised by service line with a strong focus on providing multi-disciplinary skills tailored to the client's business sector. This survey is the fruit of skills and knowledge pooling by our sustainable development and strategy teams and it was headed up by Guy Leclerc, Water and Infrastructure Director. It is part of a series of reports focusing mainly on clean technologies and renewable energies (see also our surveys of offshore wind power and solar energy). Forthcoming publications will deal with new business models and product service systems.

Bibliography

Services d'eau et secteur privé dans les pays en développement - Perceptions croisées et dynamique des réflexions, AFD, 2011

Partenariats public-privé pour les services d'eau urbains, Tendances et Orientations N°8, Philippe Marin, World Bank and PPIAF, 2009

Private Sector Participation in Water Infrastructure, OECD checklist for public action, OCDE, 2009

Global Water Market, Global Water Intelligence, 2011

Pinsent Masons Water Year Book -13th Edition, Pinsent Masons Editions, 2011

Characteristics of wellperforming public water utilities, Water Supply & Sanitation Working Notes, No. 9, World Bank May 2006

Enjeux et perspectives de la gestion de l'eau potable en milieu rural, BTC - Belgian Development Agency, December 2009

The role of the private sector in peri-urban or rural water services in emerging countries, OCDE, 2006

Financer les services d'eau potable dans les petites agglomérations via des opérateurs privés locaux, collection débat et controverse N°4, AFD and GRET, April 2011

Small-Scale Private Service Providers of Water Supply and Electricity A Review of Incidence, Structure, Pricing and Operating Characteristics, World Bank, October 2005

Délégation de gestion du service d'eau en milieu rural et semi urbain - Bilan sur sept pays africains, Water and Sanitation program, October 2010

Compétitions dans le secteur de l'eau, Dominique Lorrain, CNRS, July 2009

The greening of water law: Managing Freshwater Resources for People and the Environment, UNEP, 2010

Les besoins en eau potable dans le monde sont sous-estimés: des milliards de personnes sont concernées Gérard Payen, AquaFed, November 2011

"The Hydrologic Cycle", Fundamentals of Physical Geography, 2nd Edition, Pidwirny, Michael J., 2006

OECD Environmental Outlook to 2030, OECD, 2011

Human Development Report, UNDP, 2006

2010 Update Report on Progress on Sanitation and Drinking Water, WHO and UNICEF, 2010

Asian River Restoration Network and the fresh and coastal waters session, UNESCO, 2007

FAO Aquastat, 2010

Water in a changing world, UNESCO

How to feed the world in 2050, FAO, 2009

http://www.waterfootprint.org

World water resources and their use, UNESCO 2001

The "World Water Vision", presented by The World Water Council at the Second World Water Forum in The Hague, March 2000

Managing Water for All: an OECD Perspective on Pricing and Financing, OECD, 2009

Kristin Komives et al. "Who benefits from utility subsidies?", World Bank, 2005

De l'eau potable a un prix abordable : La pratique des États, Henri Smets, 2008

2007 Drinking Water Infrastructure Needs Survey and Assessment, EPA, 2009

Clean Water and Drinking Water State Revolving Funds Allocation Chart, EPA, March 2009

Ebb and flow of valve market, Global Water Intelligence, 2006

Soutenir la compétitivité de la filière française de l'eau et de l'assainissement, Comité stratégique des éco-industries, July 2011

The essentials of investing in the water sector; version 2.0, Goldman Sachs, March 2008

Water Governance in OECD Countries: A Multi-level Approach, OECD, 2011

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Appendix 3

ASIA

ANALYTICAL REPORT FOR THE WHITE PAPER ON AUSTRALIA'S AID PROGRAM

Prepared by
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Ian Anderson

September 2005

Table of contents

Executive summary

The strategic context

1. The Asian story is important. Asia is home to more than half the world's population, and two thirds of the world's poor. It is also home to the fastest growing economies in the world, and by 2050 three of the four largest economies in the world—Japan, China, and India—could plausibly be in Asia. Asia has produced some of the most dramatic reductions in poverty in history, with India, China and Vietnam each halving their rates of poverty in a decade and lifting tens of millions out of poverty.

2. But growth is not uniform and poverty is still a major issue. Asia is home to seven of the world's Least Developed Countries or 12 Low Income Countries, a number of fragile states, and countries with longstanding and poor records of growth and stability such as the Philippines. North Korea and Burma have poor growth histories and prospects in the near term. Inequalities are also emerging within national borders. And, despite great progress, there are still more than 700 million people living on less than US$1 a day in Asia. Importantly there are a further 1.9 billion living on less than US$2 a day, who can be tipped back into extreme poverty by external shocks or changes in circumstances.

3. Regional power dynamics are changing, and regional stability in the next ten years will depend upon how the great power relationships evolve and how the region accommodates the economic and political rise of China and India. Growth is amplifying the twin challenges of state strength and state weakness in Asia. Increasingly, national economic security for countries in the region will be determined by a country's access to export markets, its capacity to retain international competitiveness, and its secure access to resources, especially water and energy. Stability is also affected by the fact that the Asia and Pacific regions are home to at least five countries with nuclear weapons and at least three potential flashpoints (Korean peninsular, Taiwan Straits, Kashmir). Peaceful, democratic elections in Indonesia last year were important for stability in Indonesia and the region more generally. But there remain several longstanding internal insurgencies in Asia (including in the Southern Philippines, Nepal and Sri Lanka), and terrorism has emerged as a key issue in the region.

Strategic development challenges in Asia

4. Asia faces enormous—and varied—development challenges, including poverty, economic, demographic, social, environmental, and health.

5. Some challenges require large funding. East Asia alone requires approximately US$200 billion annually over each of the next five years if it is to alleviate the critical infrastructure bottlenecks already constraining growth. An estimated US$30 to US$40 per capita is needed annually to finance the minimum health service package in Asia, but Bangladesh, Cambodia, Laos, Pakistan, Mongolia, and Vietnam all spend less than US$10 per capita. Similar large-scale financing needs exist in the education sector.

6. Few growth and development challenges can be solved by money alone. Much important work can be achieved through ideas, good policy and good leadership. Asia

has 88 million unemployed youth and the trend is worsening, with all that means for social and political stability in the region. Money alone will not solve this. Policies and institutions matter. Well designed aid can help shape the enabling environment for a vibrant private sector.

7. Some development challenges in Asia are longstanding and some are new. In the health sector alone, tuberculosis—an old enemy of the poor—kills 700,000 people a year in South-East Asia and infects a further three million. Polio has just re-emerged in Indonesia and there are relatively new and emerging challenges, including HIV/AIDS, SARS, and other pandemics.

8. How well Asia responds to such large and varied challenges will affect developments in the region and beyond. The breadth and depth of Australia's relations with Asia—economic, political, security, and environmental—means there are direct national interests at stake. Australia cannot disentangle itself from these challenges, or from Asia's responses to them. Nor should it.

Aid: making good choices

9. Australian aid has assisted development in Asia to date. It can do so in the coming decade too. But aid cannot—and should not—try to respond to every development challenge, especially in a region as large and varied as Asia. Making good choices about where, why, how, and for how long aid should be provided in Asia is critical to the effectiveness of Australia's engagement with the region.

10. Four principles should therefore be used to screen and prioritise broad strategic options for Australian aid in the region. The first principle is that aid should make a clear contribution to economic growth in Asia, as a necessary (although not sufficient) condition for stability, security, and poverty reduction in the region. The second principle is that, given Australia's proximity to the region, priority should be given to aid activities that most align with Australia's national interests (broadly defined). The third principle is that, given the small size of aid relative to the challenges of the region, aid modalities need to be chosen which have the biggest long-term impact. The fourth principle is that, while strategic focus is important in Asia, so too is flexibility and the capacity to respond to the rapidly changing environment of the region (page 15).

11. This chapter offers a menu of prioritised choices for the Australian Government, together with recommendations for the coming decade. Some challenges and choices are thematic, focusing on what Australia should do. Other choices are more operational: 'how' we should do it. Still other choices are centred around programs and countries, focusing on where Australia should devote its attention and put its resources.

12. Common themes underpin these choices. Aid to Asia, for example, needs to be larger, bolder, more focused, and more modern. Ideas will count as much as money, although both will be needed.

Recommendations on what Australia should do

13. First, Australia should consolidate its efforts in sectors central to driving good quality growth and reform in Asia, such as economic governance and trade/economic integration. This is increasingly important as China and India expand their economic

engagement within the region and beyond. All countries in Asia will have to manage the rapid structural change of their economies if they are to retain their international competitiveness and therefore their primary sources of growth. The Philippines and Indonesia face particular challenges here, given their declining competitiveness. But aid can play a catalytic and helpful role in supporting necessary economic reforms. Fine tuning of Australia's work on economic governance is also recommended to give more explicit attention to private sector growth and investment: these main drivers of sustainable growth in Asia may have been underplayed in Australia's strategies to date (pages 15 to 17).

14. Second, Australia should significantly scale up its engagement in certain sectors or the forms of aid which will increasingly drive growth and reform in Asia. For example, the Australian Development Scholarships program should be significantly expanded and further modernised, because scholarships can build supply and demand for reform within developing countries; drive reform from within; build the next generation of leaders and reformers; and build good people-to-people links. Tertiary education and scholarships can be potent forms of assistance in fragile states. Significant opportunities also exist for scaled up and high-impact engagement in the health sector where development issues and Australia's national interests closely coincide. Opportunities include an initiative for preparedness and response to pandemics; leveraging up the impact of some of the large funders of health in the region; addressing some larger system-wide failings of health service delivery; and helping to plug priority but overlooked public health needs. Similar strategic opportunities are available in education including upper secondary, tertiary, vocational, and girls' education (page 17).

15. Third, if Australia is to help shape the main drivers of change in Asia, then it needs to work in new areas not traditionally large in the aid program. Physical infrastructure (especially transport) and resources (especially energy) are key drivers of the level—and quality—of economic growth in Asia, and for this reason alone should attract more Australian attention. The nature of those massive investments will have profound environmental impacts on the region and, arguably, even on climate change globally. There is a great deal Australia could do to help shape the directions these large investments will take, including by through regulatory environment and governance arrangements of public infrastructure; promotion of clean and efficient energy; and conservation of water and other resources (page 22).

16. There is also a case for considering initiatives in the relatively new field of political governance, especially building up the demand side of reform and the how of reform (page 25).

Recommendations on how Australia delivers aid to Asia in the coming decade

17. Australia already has a number of comparative advantages in the way it approaches and delivers aid in the region. But if Australia is to increase its impact over the coming decade it needs to consider three changes in the way it delivers aid.

18. First, Australia needs to be much more strategic and proactive in the way it engages with the large multilateral development institutions operating in the region. The World Bank and Asian Development Bank (ADB) lending to Asia was more than US$10 billion in 2004—some 30 times larger than Australia's bilateral program to the region.

The Global Fund to fight AIDS, Tuberculosis, Malaria—and similar new foundations—bring billions of dollars more to the region. Australia, an essentially grant donor with strong country presence and knowledge of the region, should be in a good position to leverage the policy and lending operations of such institutions. Even more importantly, however, Australia should contribute to the analytical, research, and advocacy agendas of these large, influential institutions in the coming decade (page 26).

19. Second, it needs to be recognised that ideas will be a more potent source of quality growth and development in much of modern Asia than will traditional technical assistance and projects. Australia should therefore pay more attention to supporting and disseminating analytical work and applied research on the how of reform; vigorously pursuing institutional links; promoting centers of excellence on priority issues directly relevant to Asia, including clean energy; and building people-to-people links to promote and sustain reform (page 26).

20. Third, aid architecture in Asia is rapidly changing and Australia needs to respond to, and help shape, these changes. At the multilateral level, the coming decade will see major changes to the way the World Bank and ADB engage in the region. The role of newer but potentially significant institutions like the Global Fund to fight AIDS, Tuberculosis and Malaria will also need attention. And many would argue that decisions made—or not made—under the World Trade Organization (WTO) will drive economic growth and development in a globalising region like Asia. There are also important developments arising at a regional level in the coming decade, including the East Asian Summit, cooperation in the Mekong subregion, and similar initiatives. At the bilateral level, the coming decade will see the continued rise of new and important aid providers in the region (including China) at a time of when traditional Western donors change the levels and nature of their engagement and increasingly harmonise activities. Non traditional development—for example remittances and migration—will also be increasingly important in Asia in the next ten years although rapidly increasing cross border flows of money and people have ambiguous development impacts and carry security implications. There are policy, operational, and resource implications in all this for Australia, and AusAID (page 28).

Recommendations on where Australia provides aid

21. Situations can change quickly at the country level in Asia and aid programs need to respond accordingly: the rapid and large scaling up of aid to post Tsunami Indonesia and elsewhere is the latest illustration of this. Looking ahead, a significant shift in North Korea or Burma could require large and rapid responses from Australia. Flexibility and nimbleness of aid at a country level are therefore important.

22. On the other hand, a ten-year time horizon—as offered by the White Paper — provides an opportunity to have an aid program that is strategic, focused and of sufficient duration that it can make real differences.

23. More specifically, Indonesia should, quite properly, be the largest and broadest development program Australia has in Asia in the coming decade: Indonesia's size, proximity and development challenges overlap with the national interests Australia has at stake with that country. For similar reasons, Australia should also continue with its broad spectrum relationship with East Timor, focused on maintaining stability, developing human capacity, and improving viable youth employment. In fragile states such as East

Timor, Cambodia and the Philippines, young people are potential agents for change in demanding reform. But they are also potential agents for instability, especially if unemployed. A development focus on education and employment opportunities for young people can therefore help promote governance and stability (page 29).

24. The Philippines—especially Southern Philippines—poses special developmental challenges and issues of national interest: innovative activities in education, building demand for reform and promoting stability in Mindanao may be the most fruitful strategic intervention. The Mekong region has special characteristics and opportunities for strategic aid engagement (pages 30).

25. Whether Australia should provide aid to fast-growing China and India in the coming decade is an important policy decision for Government. The arguments for and against this are discussed in this paper. A bold, forward-looking, flagship initiative for East and South Asia is canvassed that would demonstrate development impact and align closely with Australian national interests (pages 32 to 35).

Conclusion

26. Asia is large, highly varied and facing complex challenges that affect the lives of billions of people. How it responds to these challenges will directly affect Australia's national interests. Aid, though small, can help shape the response to these challenges, but it needs to be selective and sustained if it is to have impact.

27. The package of recommendations in this chapter are tailored to the special needs of a rapidly changing and varied Asia. Taken together, they seek to get to the heart of promoting durable reform in Asia. The recommendations are coherent and self reinforcing: shifting upstream to engage more on analytical and applied research that will complement an expanded and new generation of scholarships, institutional links, and enhanced engagement with the policy and analytical agendas of the multilateral development banks. Each element of the package can be applied in varying degrees to the differing country needs of Asia: from large and fast growing East and South Asia, to small and vulnerable fragile states.

Asia: the strategic and development context

A story of growth—at least for some

1.1 The Asian region has experienced remarkable economic growth over the last 15 years, halving the rate of poverty in countries like India, China and Vietnam in a decade. The region has rebounded from the 1997 financial crisis, and East Asia in particular has seen dramatic growth, with China averaging 9.7 per cent growth over the last ten years. Growth in South Asia has also been strong, largely due to the trajectory of India. Growth in the region looks set to proceed over the next decade, as China and India continue to benefit from—and themselves drive—trade. The world's economic centre of gravity will likely continue to shift to Asia: by 2050, based on current trends, China and India could well join the United States and Japan to form the four largest economies in the world.[1]

1.2 Economic growth has brought opportunities to the region, including an increase in linkages between East, South-East and South Asia. The search for further growth and the desire to prevent another shock such as the 1997 financial crisis will likely keep driving regional trade, economic and financial cooperation efforts. The economic interdependence of the region has increased—at least among the economic reforming countries—and a number of bilateral and regional trade agreements have been forged or are under negotiation. The imperatives of these trade arrangements and of WTO accession and membership are shaping policy and institutional reform throughout Asia and the pattern of growth in the region and beyond. Some sub-regional connections are also growing: strong trade flows with China, for example, are creating an economic growth corridor in the Mekong.

1.3 Linkages are also increasing politically, as the regional architecture evolves into a broader pan-Asian construct. China is continuing to look outward, India is looking to its east, and the East Asia Summit process is bringing together the ASEAN plus three (China, Japan and South Korea) states with India, New Zealand and Australia.

1.4 But the remarkable story of economic growth in Asia has to be seen in the context of the enormous challenges still remaining. Table One tells the story: growth is not uniform, with some 700 million people living on less than US$1 a day and 1.9 billion living on less than US$2 a day. Asia is also home to seven Least Developed Countries[2], and using a slightly different classification system, is home to 12 Low Income Countries.[3] Tuberculosis—an ancient enemy of the poor—kills 700,000 people a year in South-East Asia alone, and infects a further three million.[4] Median fecal coliform levels in Asian

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1 Goldman Sachs. Global Economic Paper Number 99. 'Dreaming with BRICS: The Path to 2050'. October 2003.

2 Least Developed Countries are defined by the United Nations using three criteria: income per capita of less than $US750 per annum; weaknesses in human resource profile; and economic vulnerability. With these criteria, Asia is home to the following Least Developed Countries: Bangladesh, Bhutan, Cambodia, East Timor, Laos, Myanmar, and Nepal. The number rises to eight if Afghanistan is included in the definition of Asia.

3 Bangladesh, Bhutan, Burma, Cambodia, India, Indonesia, DPRK, Laos, Nepal, Pakistan, East Timor, and Vietnam. The number rises to 14 if Afghanistan is included in the definition of Asia.

4 HIV AIDS, Tuberculosis, Malaria. The Status and Impact of the Diseases. The Global Fund to Fight AIDS, Tuberculosis and Malaria. 2005. Page 32.

rivers (a key indicator of health risk) are three times the world average and 50 times higher than the level recommended by the WHO.[5]

Table One

Selected indicators for countries in the Asia region

Country	Total population 2003 (millions)	Total expected population 2015 (millions)	Gross national income 2003 (billions US$)	Gross national income per capita 2003 (US$)	Share of population living on less than US$2 day (%)	Share of children under five who are underweight (%)
Australia	19.90	21.9	436.50	21,950	n/a	0
Afghanistan	n/a	n/a	n/a	n/a	n/a	n/a
Bangladesh	138.10	166.0	55.00	400	82.8	52
Bhutan	0.87		0.55	630	n/a	n/a
Burma	49.40	55.7	n/a	n/a	n/a	n/a
Cambodia	13.40	16.4	4.10	300	77.7	45
China	1,288.40	1389.5	1,416.80	1,100	46.7	10
DPRK	22.60	24	n/a	n/a	n/a	28
India	1,064.40	1231.6	570.80	540	79.9	46.7
Indonesia	214.70	246.8	173.50	810	52.4	27
Laos	5.70	7.3	1.90	340	73.2	40
Malaysia	24.80	29.6	96.10	3,880	9.3	n/a
Maldives	0.29	n/a	0.69	2,350	n/a	n/a
Mongolia	2.50	2.9	1.20	480	74.9	13
Nepal	24.70	31.1	5.90	240	82.5	48
Pakistan	148.40	192.8	77.60	520	65.6	35
Philippines	81.50	98.2	87.80	1,080	46.4	n/a
Sri Lanka	19.20	21.5	17.80	930	50.7	n/a
Thailand	62.00	66.3	135.90	2,190	32.5	n/a
East Timor	0.87	n/a	0.37	460	n/a	43
Vietnam	81.30	92.4	38.80	480	n/a	34

Notes: n/a = data not available
Source: World Bank, World Development Indicators 2005

State strength, state weakness, and uneven internal growth and other challenges

1.5 The region also faces the twin challenges of state strength and state weakness. Economic growth is fuelling a potentially destabilising change in regional great power dynamics, while amplifying the stresses on the states left behind.

State strength

1.6 Regional stability in the next ten years will depend upon how the great power relationships—between the United States, Japan, China, India, and Russia—evolve, and how the region accommodates the economic and political rise of China and India.

[5] Environmental Challenges of Development in the East Asia and Pacific Region. World Bank.

1.7 China's rise and its relations with the United States, Japan and India will be of particular importance to the regional balance of power. United States-China relations will depend on the degree to which the United States seeks to remain engaged in the region and how it responds to the increasing economic, political and diplomatic influence of an ascendant China. China-Japan rivalry remains deep seated, and may increase further as China continues to rise and Japan moves to adopt a more active strategic posture.

1.8 The Asia and Pacific regions are home to the world's largest militaries and at least five nuclear powers. While interstate conflict in the next ten years is unlikely, there is a risk that the regional balance of power will fail, and interstate conflict ensues. Traditional flashpoints in the region include the Korean peninsula, the Taiwan Straits and Kashmir.

1.9 But new dimensions are being added to interstate relations by growing nationalism within some states, increasing pollution, and by growing rivalry for markets and access to natural resources, especially energy. In some instances these issues will breed cooperation, such as energy pipelines linking states, and the growth of regional and subregional bodies to oversee resource allocation and to mediate in disputes. But they could also breed competition and stoke tensions. The intensifying search for export markets and for secure sources of energy, for example, is already a key driver of China's and India's foreign policy. While the India-China relationship has been maturing economically and politically, scope still exists for competition in the over markets in South-East Asia and energy in Central Asia. Energy is also an increasing source of friction in the China-Japan relationship.

1.10 Fast economic growth has brought significant development and social challenges to the states that have most benefited from it. The environment is one such issue: China has 16 of the world's 20 most polluted cities, and underground water reserves are only a quarter of their level of 40 years ago as a result of urbanisation and inefficient and excessive industrial use of water.[6] China now has 52 river sections so contaminated they are not suitable even for irrigation.[7]

State weakness

1.11 Some states are gaining little benefit from the region's economic growth and the disparity in the performances of states looks set to grow starker over the coming years. Important parts of North-East Asian economies have by and large integrated into a globalised production chain. But all states, especially those in South-East Asia, also face the significant challenge over the coming decade of improving export competitiveness and moving up the value chain in light of the dramatic change in the economic landscape brought about by China and India's growth and export prowess. States such as Taiwan, South Korea, Thailand, and Vietnam are well placed to continue to benefit from the region's growth trajectory because they have demonstrated a capacity for rapid structural change in their economies.

1.12 Some states may not be able to adjust their economies quickly and deeply enough in response to the rise of China and India. Indonesia and the Philippines—home to more than 90 per cent of the population of South-East Asia—face challenges. As shown in Table Two, these countries already face deteriorating competitiveness across the board.

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6 China 2001-2010: Political, Economic and Social Issues of Reform and Transformation. FitzGerald, Davies and Tang. 2005.
7 Connecting East Asia. Page 22.

1.13 The slipping of Indonesia and the Philippines to last and second last rankings respectively on physical infrastructure is worrying, given the critical role of infrastructure in determining international competitiveness.

Table Two

Competitiveness rankings out of 60 countries

	2001	2002	2003	2004	2005
Philippines					
Economic performance	33	40	34	43	37
Government efficiency	34	35	32	38	42
Business efficiency	31	36	40	48	49
Infrastructure	42	43	47	56	59
Indonesia					
Economic Performance	40	37	42	51	55
Government efficiency	37	47	46	56	54
Business efficiency	43	44	49	57	58
Infrastructure	46	48	48	59	60

Source: World Competitiveness Yearbook, 2004, and ADB[8]

1.14 Indonesia's democratic elections last year went smoothly, and continued the trend of democratisation in the region. But Indonesia faces significant challenges, including weak institutions, separatist concerns, terrorism, and the pressing need for economic reform. The Philippines' trajectory has been resolutely negative for a number of years: it is beset with a fiscal crisis, weak governance, poor service delivery, and political instability.

1.15 Several fragile states in Asia lack the human capacity, and physical, social and institutional infrastructure to capitalise on regional growth and risk lagging ever further behind. A vicious cycle exists in fragile states, in which weak governance and institutions, poor service delivery, a stalled economy, and instability combine to further corrode governance and institutions, reduce service delivery, erode state legitimacy, breed greater instability, increase the numbers of poor, drive investors further away, and drive the economy further down. This cycle is even more pernicious in conflict or post-conflict environments.

1.16 Cambodia, East Timor, Laos, and Nepal are among the poorest countries in the world, with weak governance, poor human development indicators and a chronic lack of human capacity due in part to their history of conflict. Cambodia, Laos and Nepal might benefit from their geography: Cambodia and Laos are in the Mekong growth corridor and Nepal is next to India. But they might also remain fragile and unstable and therefore havens for transnational crime. Cambodia also faces immediate challenges in adjusting to China's rapid expansion of clothing and garment exports in Cambodia's traditional export markets.

1.17 East Timor has one of the highest fertility rates in the world, with an average of nearly eight children per woman. Large numbers of young men have few job prospects: this fuels urban drift, social instability and crime, and can also lead to political instability as disaffected youth rally around any cause and any demagogue. Other states, including Cambodia and the Philippines, have similarly pronounced youth bulges, with population growth rates outstripping economic growth rates over the medium to long term.

1.18 North Korea and Burma have a different pathology: they have strong regimes and strong elements of the state apparatus combined with a closed and profoundly weak economy, weak governance, and weak society. The collapse of the apparatus of state power in either of these states could mean they lurch into acute crisis, with significant economic, humanitarian and security consequences including potentially sizeable refugee flows.[9]

1.19 Managing state weakness is a key issue facing the region in the next decade. Instability within fragile states can radiate out into the region in the form of refugees, violence, pandemics, and transnational crime. The security, economic and humanitarian impact would increase dramatically if they collapse.

Uneven internal growth and other challenges

1.20 Growth has not only been uneven among the states throughout the region. States such as China, India and Vietnam are experiencing starkly uneven growth internally. Uneven internal economic growth and the phenomenon of jobless growth are contributing to urban drift throughout the region as large numbers move to the cities in search of work. By 2020, two billion people—half of Asia's population—will live in urban areas with about half of those in slums. Eighteen of the world's 27 mega-cities will be in Asia.[10]

1.21 The World Bank notes that economic growth in China no longer has a dramatic impact on reducing poverty: 'Most of the remaining poor are cut off from the dynamic market economy for one reason or another: they are in remote locations far from markets and/or ethnic minorities not well integrated into society and/or disabled'.[11] This has led to a sharp rise in rural and urban inequality in recent years.

1.22 These trends have important implications for internal social and political stability, and could even derail growth in these states. There are significant interactions between large numbers of unemployed males and the potential for social and political violence, and security more generally. One study[12] notes that 'neither poverty alone nor worsening economic trends predictably produce acute conflict. Nor are economic conditions and

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9That risk, however, is not an argument for turning a blind eye to such authoritarian and closed regimes or preferring the status quo. As noted in one recent study looking at the link between poorly governed states and United States national security: 'Local elites cannot be evaded or wished away…we know from decades of painful experience that benign neglect, indulgence, or isolation seldom loosen these groups' hold on power'. (Reference: On the Brink: Weak States and US National Security: A Report of the Commission for Weak States and US National Security. Centre for Global Development. May 2004). Having said that, it is also clear that finding entry points to promote reform in such countries is difficult.

10 Megacities, Asian Development Bank Seminar Series. Megacities are defined as having a population of ten million or more people.

11 Improving the Efficiency of China's Growth is Important for the Whole World. David Dollar. World Bank.

12 Youth and Conflict: A Toolkit for Intervention. US Agency for International Development, Office of Conflict Management and Mitigation.

trends by themselves useful in explaining failed states. However a disproportionately large youth cohort correlates with the potential for violence, especially if the youth have frustrated aspirations through some level of education but limited employment opportunities. Development agencies therefore need to note that education per se is not always a force for stability.[13] This is important, since Asia has an estimated 38 million people aged 15 to 24 who are unemployed and this trend is worsening.[14]

1.23 Asia also faces the demographic challenge of ageing and the prospect of old age poverty. The United Nations notes that more than half of the world's population already live in Asia and this will increase to 63 per cent by 2050; that the number of people aged 60 and over in China, India and Indonesia alone will increase from 222 million in 2000 to 831 million in 2050; and that population dynamics have created several gender related issues which could worsen the welfare situation, particularly of women for countries in Asia.[15] The challenge of an ageing population is acute in Japan, but also will occur in the next half century in China, Sri Lanka, Thailand, and several North and Central Asian states still developing.[16] Within the next decade or two, the demographic imperatives of an ageing population in some states and youth bulges in others might lead to political movement in the region on the issue of labour mobility.

1.24 Uneven access to state resources, service delivery, economic opportunity, and poor governance—combined with sectarian tensions—have given rise to internal conflicts (for example, in the Philippines). The state has little reach into parts of the Philippines, particularly in the south, and this political vacuum has been filled by both Muslim and Communist insurgents. Localised violence in parts of the region looks set to continue in the next decade.

Transborder threats

1.25 The increased movement of goods, services and people is exacerbating transborder security threats, including transnational crime and terrorism, pandemics and natural resource depletion.

1.26 Organised crime such as gambling, drugs and the sex industry is increasing along corridors of trade and economic growth. Transnational criminal networks are exploiting the increasing disparity between and within states. As some prospering states improve border controls and security infrastructure, transnational criminal networks move to states with weaker internal security. Fragile states can thereby become centres of operation for illicit activities such as the drug trade, people and sex trafficking, money laundering, and identity fraud. Laos, for example, with its porous borders shared with five neighbours, is considered to be at growing risk of becoming a destination for transnational crime.

1.27 Terrorist networks can also use fragile states with porous borders as bases in which to hide, train or from which to launch attacks against other states and interests in the region. Cambodia, for example, is an increasingly attractive haven for transnational criminal operatives as neighbours such as Thailand have tightened their border security

13 Youth and Conflict. Page 6.
14 Economic and Social Survey of Asia and the Pacific 2005. Page 41.
15 Economic and Social Survey of Asia and the Pacific 2005. Pages 219 and 223.
16 Economic and Social Survey of Asia and the Pacific 2005. Page 224.

and cracked down on crime. Cambodia has a growing drug trade and the terrorist operative Hambali spent several months in the state a couple of years ago.

1.28 Linkages with international terrorism have increased in South-East Asia. Al Qaeda has links with the regional terrorist network Jemaah Islamiah and these networks are taking advantage of state weakness, sectarian violence and separatist movements born of local grievances and have formed links with local militant organisations. The separatist conflict in the Southern Philippines, for example, has acquired an international overlay, as the terrorist network Jemaah Islamiah has exploited the instability, deprivation and extremely weak state apparatus in that part of the state. Terrorist operatives have moved across porous borders in the region to form links with local insurgent groups the Moro Islamic Liberation Front (MILF) and Abu Sayyaf.

1.29 Increasing interdependence will also likely increase the relevance of the Central Asian Republics to the rest of Asia. The republics are characterised by stalled economies, social and political instability, links with jihadi extremists, and bountiful supplies of energy. This makes them not only a possible theatre for great-power competition, but also a potential exporter of instability in the form of transnational crime (including weapons and the drug trade) and militant extremism, particularly into the restive, Muslim-majority, and energy rich Chinese province of Xinjiang.

1.30 Environmental damage and natural resource depletion are also transborder by-products of rapid economic growth in the region. Concerns about increasing pollution and resource depletion will drive the growth of nuclear energy and a demand for clean energy. Water will be a significant issue in the medium term, and will promote cooperation and competition. The Mekong River Commission is an example of efforts at cooperation among the Mekong states Thailand, Laos, Cambodia, and Vietnam (with Burma and China as dialogue partners) to discuss the sustainable management of water resources. But water tensions exist already, for example, between China and Pakistan, Bhutan, and Nepal, and in Central Asia, as well as in the Mekong.

1.31 HIV/AIDS and other pandemics are clearly important transborder issues in Asia: paragraph 4.6 onwards.

Possible shocks

1.32 The above is the likely context in which the aid program will operate in Asia in the medium term. It is important, however, to be cautious and modest about predicting the likely strategic lay of the land. Economic growth in the region and the other trends outlined above might stall or cease as shocks emerge. One of the most significant would be if a nuclear terrorist attack occurs in Asia Pacific. Such an attack—for instance in the United States—would have a major impact on global stability and the global economy.

1.33 Another potential shock would be if China's economic growth were to stall—for example as a result of a banking or financial crisis, triggered by bankruptcy of large, unviable, state owned enterprises. Alternatively—or maybe as a result of stalled growth—there may be political crises and internal turmoil. This is not implausible if social pressures arising from the disparity in wealth and internal pressures for political reform grow in China. An abrupt halt to China's now seemingly inexorable rise would have significant consequences—first and foremost economic—for the region.

1.34 India's growth might also stall. There are varying schools of thought on the relative future performances of China and India. One school maintains that while China's growth is the more dramatic, it is more vulnerable because of its political system and other internal pressures, whereas India's fundamentals, including its democratic process, are more sound. Another school holds that the Chinese system has proved itself reasonably agile and able to calibrate the political response required at all stages of its growth, which puts it in a better position than does the more lumbering political system of India. Both views are plausible, and either might come to pass. Of course, China's and India's trajectories are not binary: both could stall or rise.

1.35 Asia is not necessarily more exposed, or vulnerable, to exogenous shocks than other regions. Indeed, evidence suggests the robust and flexible economies of East Asia are quite well placed in terms of shocks.[17] On the other hand, when shocks occur, they can have a major impact on growth and poverty. The 1997 Asian financial crisis is estimated to have made 30 million people in Asia suddenly very poor and, according to the ADB, the Boxing Day Tsunami meant two million additional people joined the ranks of the 'new poor'.[18] Aid can make a big difference in the severity, cost and duration of such shocks. The UN notes that for every dollar spent on disaster reduction about US$10 is saved by limiting the needs of subsequent relief, but research also shows that of all aid received for disasters only two per cent goes on prevention.

Australia's national interest considerations

1.36 Events in Asia matter to Australia. Australia is part of the region and cannot insulate itself from the challenges the region faces: ever-increasing regional interdependence means these challenges directly affect Australia. A sharp deterioration in great power relations in Asia or a crisis on the Korean peninsula, for example, could destabilise the region, threaten prosperity and have significant security and economic implications for Australia. Fragile states can also destabilise the broader region, as refugees, violence, and transnational crime (such as people smuggling and trafficking), drug smuggling, and gun running spread across porous borders. Terrorist operatives can use weak states as bases in which to train and from which to attack other states in the region, including potentially Australia. Australia has of course already felt the brunt of terrorism in the region, with the Bali bombing in October 2002 that killed 202 people including 88 Australians, and the bombing outside the Australian Embassy in Jakarta in September 2004, with 11 victims. And pandemics in the region and environmental damage have consequences for Australia.

1.37 Our prosperity and security are inextricably bound up with the prosperity and security of Asia. Indonesia, East Timor and the Philippines most directly engage Australia's interests: they are nearest to Australia of the states in Asia and their instability has a great capacity to affect Australia. But it is also in Australia's interests that the rest of Asia prosper and be secure.

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17 The World Bank notes that 'what is remarkable about East Asia is not that it experienced a crisis in 1997 but that it experienced so few crises over the preceding decades. By and large, developing countries have one year of negative per capita growth roughly once every three years. In East Asia the average is half that rate. Korea has had only three years of negative per capita growth since 1961.' See Economic Growth in the 1990s—Learning from a Decade of Reform. World Bank. 2005. Page 4.

18 Economic and Social Survey of Asia and the Pacific 2005: Dealing with Shocks. ESCAP. Page 38.

1.38 So what role can the aid program play within a whole-of-government approach to promote prosperity and stability in the region? This role needs to be grounded in a realistic assessment—as to what an aid program can and cannot achieve. Aid will have little bearing on most aspects of great power relationships in Asia Pacific, but it can help find further opportunities for economic growth and shape the policy environment to drive further growth. It can also have an impact on state weakness and uneven growth among and within states, and help minimise possible threats such as transnational crime, terrorism, financial shocks, pandemics, and the effects of resource depletion and environmental damage.

The response: making good development choices

2.1 The preceding section makes two points. First, strategic issues, growth and development are inextricably intertwined in Asia. Second, how well countries in the region manage these challenges has direct consequences for themselves, the region and Australia.

2.2 How Australia responds to these challenges is important. Making good choices is critical, especially in a region as large and varied as Asia. Aid cannot DO everything. Nor should it. This paper therefore recommends four principles to filter and prioritise Australia's aid response to the strategic challenges of Asia over the coming decade.

2.3 The first principle is that preference should be given to activities that contribute to sustained, high quality, growth in the region. Sustained high quality growth[19] is a precondition for prosperity, stability and security, and will do more than anything else to reduce poverty. As noted in a recent World Bank study of 14 countries: 'The pace of overall economic growth is the main factor that determines how quickly poverty declines' and that, on average, a one per cent increase in GDP per capita reduced poverty by 1.7 per cent.[20]

2.4 The second principle is that aid interventions in Asia needs to align with Australia's national interests. These interests are increasingly intertwined with the strategic and development challenges facing Asia by virtue of Australia's location and increasing economic integration in the region. Australian aid can complement the broad and constructive engagement the country has with Asia, including whole-of-government engagement, and broader economic integration.

2.5 The third principle is that aid should be increasingly strategic and leverage up its impact if it is to be effective over the coming decade. This is particularly true in a region as large and varied as Asia, where even total aid—let alone Australian aid—is relatively small (latest figures show, for example, that aid to Indonesia represents just 0.8 per cent of Indonesia's economy, or US$6 per capita per year. The relative size of aid in other countries of Asia is similarly small).[21] Australian aid to Asia should increasingly focus on what it does best and where it can demonstrate comparative advantage.[22]

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19 There are various definitions of 'quality' or 'pro-poor growth. See for example The Quality of Growth. World Bank Publication. September 2000 and What is Pro-Poor Growth and why do we need to know? DFID Pro-Poor Growth Briefing Note 1. February 2004. In essence, this paper uses the term 'quality growth' to mean growth that is environmentally and socially sustainable and reduces poverty.

20 Pro-Poor Growth in the 1990s: Lessons and Insights from 14 Countries. World Bank (and others). June 2005.

21 World Development Indicators 2004. World Bank. Page 335. Similarly, ODA accounts for approximately just one per cent of gross investment in low and middle income countries in East Asia generally; 0.1 per cent of

2.6 The fourth principle is that, while being strategic and focused, aid should also be flexible and responsive to the rapidly changing environment of Asia. Many major events that now characterise the region were not and could not have been predicted ten years ago.[23] The same applies now.

2.7 Using those four principles to screen the wide array of development challenges in Asia produces a package of recommendations and options for Government. These can be grouped under three broad headings: the challenges Australia should focus on in the coming decade; changed modalities for Australian aid; and changed country and regional priorities.

Recommendations on what Australia should do

3.1 The recommendations are options: not all could or should be applied in all cases or all countries. It is worth noting that many recommendations overlap and reinforce each other. Improved domestic economic governance—for example through more transparent and predictable application of domestic commercial law—can improve prospects for trade, foreign investment, and broader economic integration. This, in turn, can help sustain and lock in the pace of economic governance reforms.

Consolidation of existing efforts

3.2 Australia should continue and consolidate its existing efforts in areas central to driving growth and reform in Asia.

Economic governance

3.3 In practice, this means Australia should continue its focus on economic governance. International literature and experience demonstrate that good governance—especially economic governance—is at the core of quality economic growth. Evidence for this is overwhelming, including for Asia. One example emerges from the latest World Bank research on growth which reports that:

> A successful pro poor growth strategy should have, at its core, measures to achieve sustained and rapid economic growth. These include macroeconomic stability, well defined property rights, a good investment climate, an attractive incentive framework, well functioning factor markets, and broad access to infrastructure and education.[24]

3.4 Australia has worked to support several—but not necessarily all—of those drivers of pro poor growth. For example, Australia has a very good record of working in

China's economy; and 0.7 per cent of the Philippine's economy. It does, however, represent 17.3 per cent of the GNI of Lao PDR; and 12.7 per cent of Cambodia's GNI.

22 The usual tests for good aid effectiveness should, of course, continue to apply over the coming decade. Good development is essentially about reform and change and aid programs should, at all times, support that process. Aid should not substitute for partner government's own efforts nor should it substitute for the private sector, support reforms that would have happened anyway, or support reforms that will never be sustained because of intractable vested interests. The environment for aid is changing rapidly and aid modalities need to change too.

23 See separate paper entitled If the White Paper had been written in August 1995.

24 Pro-Poor Growth in the 1990s: Lessons and Insights from 14 Countries. Page 2.

areas of broad macroeconomic stability, public sector financial management and land tenure and property rights in Asia. But if sustained and sustainable economic growth was to be the primary lens through which we maximise the impact of Australian aid, the time may be approaching where we shift the current emphasis on civil service and public administration reform as such and give more explicit attention to reforms that improve the environment for private sector growth. There are now several effective, innovative examples of how aid agencies can achieve high development impact in promoting, or working with, the private sector that could serve as a model, including the World Bank's Doing Business approach and innovative work on what is termed 'output based aid'.[25]

Trade and regional economic integration

3.5 Australia should also continue and its efforts with trade and regional economic integration. The justification for this is clear. First, trade and economic integration is highly correlated with growth.[26] Second, the evidence[27] suggests that the dynamic growth of China and India over the coming decade will be one of the single biggest drivers of the level and pattern of growth and development in the region— there are major opportunities but also major risks. Third, Australia has fundamental national and broad whole-of-government interests at stake in the trade and economic integration path Asia takes over the coming decade. Fourth, 'trade is an opportunity, not a guarantee'[28] for quality growth so there may be slippages and missed opportunities. Countries can easily fail to capture the economic and developmental benefits of trade. The public good nature of well designed aid means it can help respond to market and government failures and be a catalyst for reform.

3.6 Australia has a successful record of facilitating trade and economic integration in the region, including aid funded support for China's accession to the WTO. New and significant opportunities are arising for aid to play a catalytic role in deepening economic integration in the region. Many of these initiatives have a major focus on economic growth and integration, and aid may therefore well have an important—albeit supporting—role to play.

3.7 However the sheer number of regional and subregional initiatives—see for example paragraph 5.11 below—means that aid interventions need to be selective and very strategic. Aid is likely to be most valued and effective in those regional and subregional institutions which drive the process of domestic internal reform for countries in the region; involve institutional or regulatory reform; or involve capacity building. The proposed greater use of applied research, 'ideas' and evaluation of reforms (paragraph 5.5) would also complement these activities. Australia could work with the ADB, which is clearly giving much higher priority to the regional economic integration.

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[25] See Doing Business in 2005: Removing Obstacles to Growth. World Bank. For output based aid see www.gpoba.org

[26] Globalisation, Growth and Poverty—Building an Inclusive World Economy. World Bank. 2001.

[27] Asia and China: Growing Together? Keynote Speech by President of the ADB, H Kuroda, at the Institute for International Economics. 23 June 2005. As one example: China's imports from Asia have risen by an average annual rate of 31 per cent over the period 2001 to 2003 in US dollar terms.

[28] Economic Growth in the 1990s: Learning from a Decade of Reform. World Bank. 2005..

Rural development

3.8 Rural development will remain a critical driver of growth for many countries in the region over the coming decade. Poverty will be concentrated in the rural sector through to 2025. World Bank analysis shows that:

> increasing agricultural productivity is the most efficient path for many countries to reduce poverty and inequality; that agricultural growth has been more pro poor than industrial growth in Indian and in Indonesia; and that in China primary sector growth has about four times the impact on poverty reduction as secondary or tertiary sector growth. Rural and especially agricultural growth reduced inequality not only in rural areas but also between rural and urban areas.[29]

3.9 Good quality rural development is also a strong driver of employment opportunities for youth in developing countries, food security and protecting the natural resource base. This is particularly true in countries like East Timor where more than 80 per cent of the population is rural and the vast majority poor, but it is also in many other countries of Asia.

3.10 Australia has a great deal to offer here. The benefits of Australia's agriculture, forestry and fisheries research and development continue to raise productivity and improve the sustainability of farming systems in much of Asia. Australia's knowledge in water and river basin management and the prevention and treatment of soil salinity is widely recognised and adopted. Expertise in agri-business development and management, trade policy and practice, quarantine and phyto-sanitary standards and regulation, and rural finance are also widely accessed by Asian governments and the private sector. The coming decade is also likely to see rapid developments in genetic based research applications in agriculture. Australia would be well placed to support work here.

Significant scaling up

4.1 Australia should also significantly scale up its existing engagement in those sectors, or forms of aid, which will increasingly drive growth and reform.

Scholarships for leadership and reform

4.2 One specific recommendation is to scale up Australian Development Scholarships as a vehicle for the next generation of leadership and reform in Asia. The justification for this is clear. The dramatic changes expected in a dynamic Asia in the coming decade require continued reform—for the fast growing and reform minded countries of East and South Asia as well as the weaker and fragile states of Asia. But reform for reform to happen it needs reformers.

4.3 Many in Asia argue that the most effective and durable reform comes from having a critical mass of well trained and capable local leaders, who have exposure to international practices in positions of authority to make their own systems adapt and work better. Such reform from within is preferred to externally provided technical

[29] Pro Poor Growth in the 1990s. Op cit. Page 42.

assistance from consultants. A constant theme of stakeholders in the region, including from multilateral banks, is that Australian Development Scholarships were possibly the most effective form of aid Australia delivered and that they should be expanded and made even more effective. Scholarships not only build capacity and the supply side of reform, they also build the demand side of reform, especially if they involve a critical mass of reformers.

Box One: Education, scholarships, leadership, and aid in fragile states.

'The typical Low Income Country Under Stress (LICUS) not only has a small share of its population with above primary education, it also has a small population. Hence, the pool of educated people may well be too small either to generate or to manage the radical adaptations that are necessary in the transformation from LICUS status…Aid spent on providing a cadre of well educated people has an expected pay off far in excess of its likely cost.'

Development Effectiveness in Fragile States: Spillovers and Turnarounds. Lisa Chauvet and Paul Collier. Mimeo 2004.

4.4 Of course, scholarships do not automatically or always produce leaders and reform. Indeed, poorly conceived scholarship programs can become a tool of patronage that just help perpetuate a self-serving and closed elite that holds onto power and blocks reform. And development scholarships from Australia should never substitute for scholars who would have come here under privately funded sources. It is also important that development scholars return to their countries to contribute to the growth and reform process.

4.5 It is therefore important that Australia continue to look critically at the way it manages its scholarship program to ensure it maintains the standards of developmental effectiveness, integrity, efficiency, and accountability. Australia has an established and effective record of scholarships for development, dating back to the Colombo Plan. More, however, can be done to improve the impact of scholarships and ensure they meet the contemporary development needs of modern Asia. For example, scholarships could be better targeted in numbers and focus to meet the leadership, reform and capacity needs of fragile states. More can be achieved to ensure the impact of returning scholars is not diluted by perverse institutional incentives operating in the country to which they return. The people-to-people links that are a feature of scholarships could be better matched and consolidated with institutional-to-institutional links. And more progress could be made in building and supporting a professionally and developmentally oriented alumni of scholars.

4.6 It is also important to recognise that the largest contribution to growth and development will come, ultimately and quite properly, from the quality and effectiveness of a developing country's national system of education, from the basic education system through to tertiary and adult education. Much of this drive and effort has to come from the developing country itself, because the challenges that need to be addressed are system-wide. But development agencies can and should support the reform of education systems (see also paragraph 4.15).

4.7 Significant scaling up of Australian aid could also occur in health. The justification for this is strong. Good health is an important development objective in its own right, is a strong contributing factor to economic growth, and has direct links with poverty reduction.

Pandemics

4.8 There is a strong case for scaling up Australian assistance to combat pandemics. Pandemics have large human, social and economic costs and can undermine development (see Box Two). Pandemics also directly affect Australian national interests by imposing potentially large health, social and economic costs on Australia. A significantly scaled up aid response is also warranted because of the strength of well-designed aid when public good arguments[30] are involved in combating pandemics.

4.9 HIV/AIDS is probably the most obvious pandemic challenge in the region. Given its importance a separate paper on HIV/AIDS was commissioned for this White Paper process. However the following points are highlighted with respect to Asia. First, the path of HIV/AIDS in Asia will determine the global situation. As noted by the World Bank:

> With almost half the world's population, Asia will determine the future of the HIV/AIDS pandemic. If prevalence rates in China, Indonesia, and India increase to numbers similar to those seen in Thailand and Cambodia, the rate of HIV/AIDS would double globally. Such growth would be devastating for individuals—and for the region's health systems, economies, and social fabric.[31]

4.10 Second, Asia faces important challenges. Estimates of the number of people living with HIV in East Asia grew by almost 50 per cent between 2002 and 2004—one of the fastest growing AIDS epidemics in the world.[32] And worrying situations are likely to develop close to Australia over the coming decade. The latest UNAIDS Epidemic Update notes that HIV prevalence among sex workers in parts of the eastern most Indonesian province of Papua had reached 17 per cent, more than five times the national average for Indonesian sex workers. That same report shows that nearly six out of ten sex workers in East Timor have never heard of AIDS, four out of ten do not recognise a condom when shown one, and zero out of ten consistently use condoms with their clients. The concurrence of poverty, fragile states, poor public health systems, and heroin and drug trafficking is a particular challenge in parts of Asia.

4.11 Third, there are some important positive situations. Countries such as Bangladesh and Phillipines are still seeing low levels of HIV prevalence, even among

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30 In brief, it may not just be lack of a critical mass of scientific and public health management capacity that constrains developing countries from responding to pandemics—although they may well be factors. . Rather, individual developing countries may not have a strong incentive to invest scarce resources in fighting pandemics if they believe the actions—or inactions—of neighbouring countries will drive the course of the epidemic anyway, or if there is a fear neighbours will simply become free riders on any solution. Well designed and coordinated aid programs can compensate for these constraints.

31 Addressing HIV/AIDS in East Asia and the Pacific. Health Nutrition and Population Series. The World Bank. 2004. Page 1.

32 Global Fund. Op cit. Page 11.

people at high risk of exposure to HIV, and have significant opportunities to avoid serious outbreaks. Thailand and Cambodia have been able to reduce prevalence rates.[33]

4.12 Newly emerging pandemics such as SARS can also have major health, financial, economic, and political repercussions in the region and beyond (Box Two). The link to zoonotic diseases appears particularly close in Asia. Bioterrorism is also a risk.

Box Two: the effects of SARS

Starting in rural China, SARS spread to five countries within 24 hours and to 30 countries on six continents within several months. One infected person traveled by plane from Hong Kong to Toronto: 438 people were later infected in Canada; 43 died; the Canadian Tourist Commission estimated the epidemic cost the nation's economy $US419 million; and the Health Minister estimated SARS cost Ontario's health care system about $US763 million. The economic impact of the six-month SARS epidemic on Asia Pacific is estimated at about $US40 billion.

SARS also had substantial political consequences. Chinese Premier Wen Jiabao said in a Cabinet Meeting on the epidemic that 'the health and security of the people, overall state of reform, development, and stability, and China's national interest and image are at stake.'

Preparing for the Next Pandemic
M Osterholm in Foreign Affairs, July-August 2005

4.13 A major influenza epidemic in the coming decade would have substantial health, development, and economic effects in the region and beyond. The Director of the Centre for Infectious Disease Research and Policy, and Associate Director of the United States Department of Homeland Security, notes:

> Consider this sobering information: the most recent influenza pandemic of 1968-9 emerged in China when its population was 790 million; today it is 1.3 billion. In 1968 the number of pigs in China was 5.2 million; today it is 508 million. The number of poultry in China in 1968 was 12.3 million; today it is 13 billion. Changes in other Asian countries are similar. Given these developments, as well as the exponential growth in foreign travel over the past 50 years, an influenza pandemic could be more devastating than ever before…The reality of a coming pandemic…cannot be avoided. Only its impact can be lessened. [34]

4.14 An illustrative model for what could be done to respond to a major pandemic is canvassed in Box Three.

[33] Global Fund. Op cit. Page 20. And the example of Cambodia where HIV prevalence has declined from a high of 3.3 per cent of the adult population to 1.9 per cent shows that impact is possible if governments recognise the problem and effective action is well targeted.
[34] Michael Osterholm, Director of the Centre for Infectious Disease Research and Policy, in Foreign Affairs. Op cit.

Box Three: responding to a major pandemic in the region

Many believe that a major pandemic—for example of influenza—is inevitable in the region and would have major health, social and economic consequences.

What can Australia usefully do now? A coordinated whole-of-government response, including the aid program, could save lives and avert huge economic losses. Specific initiatives would involve significantly strengthening disease surveillance in countries in the region so that outbreaks can be detected and responses launched earlier: countries cannot be strategic in the absence of good data and that requires improved surveillance. It also requires improved laboratory diagnostic capacity and training and equipping of national and regional response teams. Reinforcing health control measures at national borders is critical to reducing transboundary spread of disease. Support to international collaborative research, including efforts to develop vaccines, is also important to finding more sustainable solutions.

4.15 While a new focus is needed on pandemics, continued attention is also needed for endemic and communicable diseases. Malaria continues to be a major concern. One third of the world's TB cases are found in South-East Asia: nearly three million new cases and 700,000 deaths per year.[35] Multiple drug resistance and HIV/AIDS threaten to undermine gains made in TB control and tend to disproportionately affect the poorest and most vulnerable. After an absence of ten years, polio has re-emerged in neighbouring Indonesia, with 219 cases being reported in Java and Sumatra.[36]

4.16 For strategic gains to be made in health there needs to be increased engagement with health system development.[37] How governments in the region organise their financial and human resources to deliver public health is the strategic driver of longer term outcomes. Regional responses in Asia rest in many respects on the quality and depth of national responses and national capacities and there are significant weaknesses and gaps in Asia. Indeed, there are huge unmet health needs in Asia: an estimated US$30 to US$40 per capita is needed annually to finance the minimum health service package in Asia, but Bangladesh, Cambodia, Lao PDR, Pakistan, Mongolia, and Vietnam all spend less than US$10 per capita. Scaled up assistance that address the root causes of systems failure would have widespread and strategic impact. It would also help address currently neglected and underfunded priorities including maternal and child health care in Asia.

4.17 Similar opportunities for significantly scaled up, and strategically wide impact, apply in the case of education. Again, the rationale is clear: like health, education is a benefit in its own right that creates a foundation for economic growth and has spill over benefits for health. Scholarships to study in Australia are the first pillar in human capacity development assistance. The second pillar is support for reform and strengthening of the

35 Global Fund Report. Op cit. Page 32.
36 Polio vaccine scheme needs $7 million in The Australian. July 9-10 and August 16 2005.
37 It is not always clear what sort of health systems countries are trying to build with their own resources and external aid. Sustainable financing of health care (with an appropriate public/private mix); human resource planning, development and management; and health commodity procurement and management, are key building blocks. Deficiencies in these areas are crippling health systems rather than technical aspects of addressing specific diseases. Expanding criminal activity in the manufacture and distribution of counterfeit pharmaceutical products is one example of an issue requiring regional collaboration that extends beyond the health sector. .

education system itself within the country. Mass education makes an important contribution to nation building and stability by enabling people to engage with law and justice systems and democratic processes. Education—including science, higher and technical vocational education—will be an increasingly important determinant in Asia of a country's capacity to engage and compete in a global economy over the coming decade. Improving the access and strengthening the quality and rigour of higher and tertiary education can help produce the next generation of public and private sector leaders. Support for higher and tertiary education is particularly important in fragile states, in which a lack of human capacity constrains economic growth, good governance through mismanagement and problems with policy implementation, and development more broadly. Education will also be an important part of the response to growing inequality between and within countries in the region, and between genders. Girls' education has been found to be one of the most effective and durable forms of aid investment possible.

4.18 There are significant, specific opportunities for larger scale initiatives in education at the specific country level. These relate to basic, higher and technical/vocational education and capacity building in East Timor, education systems reform in the southern Philippines (paragraphs 6.7 and 6.8), the option of a very large and bold initiative involving education, and girls' education across East and South Asia (paragraph 6.22).

New areas for Australian engagement

Physical infrastructure

4.19 With some notable exceptions[38] Australia has not concentrated on physical infrastructure in its aid program. However if Australia wishes to be engaged in the main drivers of future economic growth in Asia over the coming decade, then physical infrastructure should be looked at again. The evidence is clear: infrastructure bottlenecks are likely to choke off growth in Asia unless there is major change. One major recent study finds that East Asia alone has resourcing needs in infrastructure of US$200 billion per year over each of the next five years: a total of one trillion dollars.[39] It is also clear that much of the multilateral—and even bilateral—aid flows to the region will GO TO INFRASTRUCTRE. It is not in Australia's interests to be passive onlookers of such large flows, if only because the country is a shareholder in multilateral development banks and should be intelligently engaged in their core business.

4.20 Australia is unlikely to be a dominant funder of infrastructure in Asia—the financial costs are large and it is not necessarily the most appropriate use of grant aid. But there are opportunities for innovative engagement in this sector where Australia can help shape and direct the much larger investments flowing in which will shape growth and development in the region. For example, transport and growth corridors are vectors for HIV/AIDS transmissions—both at the construction phase and after completion—and Australia has recognised expertise, comparative advantage and interests in reducing HIV/AIDS transmission.

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[38] The My Thuan and Friendship bridges; post Tsunami Indonesia; some major infrastructure investments in the Philippines; and some large mixed credit activities in the 1980s and early 1990s, including significant investments in rural bridges in Indonesia. If water and sanitation is classified as infrastructure, then significant investments have occurred in this sector.

[39] Connecting East Asia.

4.21 Australia has also demonstrated expertise in the economics and broader development impact of infrastructure: analytical work on the My Thuan Bridge, for example, has been used as a model by other bilateral funders of infrastructure in the region. Economic governance in infrastructure is also key: up to 30 per cent of investments in infrastructure are lost to corruption and poor governance,[40] while Australia has good systems for improving the efficiency, accountability and value for money of large scale investments. Finally, and importantly, construction and maintenance of key infrastructure such as roads is a major opportunity for generating long-term employment—especially among the poor and unemployed—in ways that can simultaneously reduce the import demand for capital equipment by up to 30 per cent.

Resources, especially clean energy

4.22 Australian aid should also be directed at another new sector: resources, especially secure sources of clean energy and more efficient use of energy resources. The rationale is clear. First, the sheer size and scale of resource use in Asia over the coming decade is strategically important in its own right, driving everything from economic growth to environment and climate change. Energy consumption in China, for example, doubled between 1980 and 2000, and China is likely to displace the United States as the biggest energy user by 2050.[41] Between 1990 and 2025 China's total carbon emissions are projected to rise by more than the combined increase for the United States, Western Europe and Japan.[42] Much the same could be said for South Asia.

4.23 It is not just the magnitudes that demand attention. The efficiency and cleanliness of resource use do too. China, for example, requires about three times as much energy as the United States to produce US$1 of economic output and emits nearly four times as much carbon dioxide per dollar of economic activity as the United States.

4.24 Secure access to energy has become a national security issue for many states in Asia and nuclear energy is increasingly seen as the answer by some. According to the World Nuclear Association, for example, China plans to build 27 nuclear plants to boost nuclear energy four-fold by 2020, and India intends to build up to 24 reactors over a similar period.[43]

4.25 In short, access to clean energy and its more efficient use is a major strategic issue affecting the pace and quality of economic growth and development in the region. Australia has significant expertise in promoting clean energy, is a major exporter of energy (as well as holding the second largest reserves in the world of uranium), and has a direct interest in avoiding greenhouse gas induced climate change or environmental damage in the region through effects such as acid rain.

4.26 This will inevitably involve a whole-of-government response from Australia. Within that response, opportunities for significantly increased Australian aid engagement in this strategically important sector could include much greater and more specific

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40 Connecting East Asia. Page 117.

41 China Human Development Report 2002—Making Green Development a Choice. UNDP and Stockholm Environment Institute. Oxford University Press. Page 55.

42 'Coal Reliant China clouds environmental outlook'. The Australian Financial Review. 8 July 2005. Page 81. . The article cites the Energy Information Administration as the source of the estimate.

43 'Glowing Outlook for Uranium' in the Australian Financial Review. 8 July 2005. Page 67.

engagement with the ADB and World Bank policy and lending operations in energy (paragraph 5.3) and/or a large long-term pipeline of development scholarships aligned with institution to institution links (paragraph 4.2). The establishment of the Asia Pacific Partnership for Clean Development and Climate is timely and a welcome opportunity to elevate the role of clean and efficient energy production in the aid program to Asia. This is particularly so given that the members of the Partnership include India, China, and South Korea from Asia and, with the United States and Australia, account for more than 40 per cent of the world's greenhouse gas emissions.

Political governance

4.27 Another possible option for a new area of engagement is in political governance. Political leadership and governance clearly have direct and strategically significant effects on the rate and quality of economic growth: each of the economic histories of China, India, Indonesia, Vietnam, Cambodia, Laos, South Korea, Singapore, Philippines, Burma, and others over the last 50 years tell a vividly contrasting story about the central role of political governance in facilitating—or destroying—growth prospects. The importance of political governance on growth continues today. In July this year Moody's downgraded its outlook for the Philippines sovereign debt from stable to negative, and Standard and Poor also downgraded 'citing concerns over the direction of badly needed economic reforms in the light of the (political) turmoil'.[44]

4.28 Australian aid can assist the process of political governance without being unacceptably intrusive: the key is to have demand driven, not supply driven, responses. Some assistance can be quite direct, such as support for a country's electoral process as Australia has done in East Timor, Cambodia and elsewhere.

4.29 In the right circumstances, Australia could also lever up its impact on the reform agenda more broadly by working in partnership with the multilateral development banks. These banks increasingly recognise the relevance and role of political governance in reform but are prevented from being involved in more direct 'political' activities by their founding charters. There may well be circumstances where a partner government in a developing country may welcome Australian aid-funded analytical research or pilot testing of a reform process that is initially in the domain of political governance that could later be supported by larger funding through a World Bank or ADB program.

4.30 In other cases the most valued, highest impact, and most durable assistance may be activities which enable the countries themselves to push reform from within. The Australian aid program has a lot to offer here. Helping build a critical mass of reformers through a modernised and expanded scholarships program is one major initiative open to the Australian Government (paragraph 4.2). Another option is to provide substantial support to centers of excellence that generate high quality—but applied— research: putting quality data in the hands of reformers (or the public) can be a potent force for reform. Shifting the emphasis in aid from the what of reform delivered through technical assistance to the how of reform through the power of ideas and applied analytical research is another option (paragraph 5.5). It is clear that demand driven assistance can enable

[44] 'Arroyo hangs on as middle class shops'. The Australian Financial Review. 14 July 2005. Page 12.

Australian engagement in strategically significant but otherwise politically sensitive institutions.[45]

Agents for change

4.31 Young people are potential agents for change in demanding reform, including in fragile states. But they are also potential agents for instability, especially if unemployed (paragraph 1.22). The challenge for an aid program is to help shape young people into forces for political reform, not forces for political instability. A development focus on education and employment opportunities for young people in fragile states can help reduce the disaffection among young men that can be so destabilising, and thereby help promote governance and stability. This can be done by working directly and innovatively to help build a vibrant private sector, putting more emphasis on technical and vocational education, and giving more attention to employment intensive approaches to infrastructure investments and rural development.

4.32 There is also scope to promote the role of women as agents for change in situations of conflict and instability and to help drive demand for better governance, particularly in the Philippines where women have a successful record of driving change, including at the community level. Other possible agents for change might be the churches in countries like the Philippines and East Timor.

Recommendations on how Australia should respond

5.1 Australia already has a number of comparative advantages in the way it approaches and delivers aid. Based on conversations with stakeholders in the region, these include: policy coherence and a whole-of-government approach to development issues in the region (trade policy aligns with aid and development policy etc); a long-term commitment to engagement in the region (evidenced also by the ten-year timeframe of this White Paper); and positive characteristics of aid delivery (primarily grant aid, involving competent technical expertise, managed through a single, professional, devolved, aid agency).

5.2 But if Australia is to have impact in a rapidly changing Asia over the coming decades, it needs to consider three changes in the way it delivers aid, as outlined in this section.

Multilateral banks

5.3 First, Australia needs to be much more strategic and proactive in the way it engages with large multilateral development institutions in the region. Loan disbursements from the World Bank to Asia totaled US$5.27 billion in 2004.[46] Loan approvals from the ADB to the region in 2004 provided a further US$5.3 billion. Lending from these two institutions alone is 30 times larger than the US$463 million

[45] Australia discussed with China about aid supported research and training activities with the Communist Party School in Beijing which trains China's elite. Discussions in Vietnam also indicate there would be no political impediment to Australia supporting research for the Office of the National Assembly.

[46] US$2.7 billion to South Asia, of which US$1.835 billion was from the highly concessional International Development Association (the IDA arm of the World Bank) and the balance from the regular IBRD arm of the bank; and US$2.55 billion to East Asia and the Pacific, of which US$1.7 billion was IBRD and the balance IDA. While lending to the Pacific is included in this grouping, actual levels are quite small.

Australian bilateral program to the region. Australia, an essentially grant donor with strong country presence and knowledge of the region, should be in a good position to leverage the policy and lending operations of such organisations.

5.4 But aid is more than development finance. Increasingly, effective development is about the transfer of ideas as much as it is about the transfer of resources. Many would say this seems to be particularly true in Asia, which has an insatiable appetite for learning the pragmatic lessons of reform. It is also true for fragile states where traditional or large financing packages may not be appropriate. Well-constructed and applied analytical research done jointly with the banks—particularly early in the banks' consideration of issues—can help shape the banks' subsequent approaches in the region. The banks are clear that they would welcome a much stronger analytical and advocacy role from Australia in the region (see also following paragraph).

Analysis and ideas

5.5 The second change that Australia should consider in the way it delivers aid is therefore to be much more proactive in the generation and dissemination of analysis and ideas related to development. Australia has a good base here. Australian aid is seen as particularly innovative and prepared to test new ideas and approaches. Several Australian universities specialise in, or have close formal links with, countries in Asia. These countries argue that, notwithstanding its developed country status, Australia's reform experience over the past decades is instructive in areas as diverse as trade policy and industry restructuring, health financing, education policy, public sector reform, public financing, and public-private partnerships for infrastructure development. That these reforms occur within a federal system, and in a mixed economy, has resonance and lessons for reform minded Asia.

5.6 There is much Australia can do to generate analysis and ideas at a practical level. Australian aid could more actively undertake the type of applied operational research that the World Bank and ADB do and which can have such a large impact on ways of promoting development in the region.[47] More emphasis could be given to capturing and disseminating the lessons of particular reform efforts, including but not limited to the trial and pilot aid activities that occur in the region, but which often do not get scaled up.

5.7 The Australian Government may wish to establish a specialised research institute on development issues, similar to the UK Overseas Development Institute. Alternatively, the ten-year time frame of this White Paper could be an opportunity for developing longer term partnering links between AusAID and research institutions in Australia and overseas that address development issues. Another option could be to use the aid program as a means of fostering longer term partnering links between Australian research institutes and their counterparts overseas. Whatever option is chosen, increased use of research institutes could be designed to complement and reinforce the development benefits of an expanded role for scholarships in Asia.

[47] Examples of high quality applied operational research include Achieving the Twin Objectives of Efficiency and Equity: Contracting Health Services In Cambodia. Indu Bhushan et al. ERD Policy Brief Series Number 6. Asian Development Bank. 2004. Examples from the World Bank include Doing Business in 2005: Removing Obstacles to Growth as well as the innovative work on output based aid (www.gpoba.org)

Changing aid architecture

5.8 The third change Australia should consider in the way it delivers aid in the coming decade arises from the rapidly changing environment for aid and overall aid architecture in Asia.

Multilateral

5.9 At the multilateral level, the coming decade will see major changes to the way the World Bank and ADB engage in the region. Both institutions are evaluating their future role, especially since some large middle income borrowers can access international capital markets readily and may not need to borrow from banks. Both institutions will need to develop how they engage with fragile states, especially when traditional lending products are not appropriate. And both will need to accommodate the increasingly active role being played by India and China as donors rather than borrowers to banks.

5.10 The role and significance of other multilateral institutions on Asia's economic and development path will also change over the coming decade. Many would argue that in a dynamic and globalising region like Asia, decisions made—or not made— under the auspices of the WTO over the coming decade will have a greater impact on growth and development in Asia than will traditional development financing institutions. And others believe the International Monetary Fund's (IMF) role in development in Asia may decline somewhat over the decade as more countries build strong foreign exchange reserves.

5.11 Aid architecture in the region over the coming decade will also be affected by new institutions such as the Global Fund to fight AIDS, TB and Malaria, the Global Alliance for Vaccine Initiative, and the Gates Foundation. The initiatives of these institutions are to be welcomed, but new challenges arise when their potentially large funding flows[48] occur outside of traditional donor coordination mechanisms or without necessarily having strong capacity building support structures to make use of such funds. There is much Australia could do to work alongside these large, well funded, and innovative foundations. Examples include helping partner governments design and appraise their proposals to such funding bodies; building capacity for the operation of approved funding; and plugging the critical gaps that often emerge in interventions and which undermine broader development effectiveness.

Regional

5.12 Important initiatives likely to continue at a regional and subregional level in the coming decade include the East Asia Summit, Asia Pacific Economic Cooperation (APEC) and the Mekong subregion cooperation. Several regional arrangements have emerged since the Asian crisis, aimed at preventing and enabling better responses to future crises. These include the Association of South East Asian Nations (ASEAN) +3 group (ASEAN plus China, Japan and South Korea), which is becoming the key vehicle for policy dialogue and cooperation in Asia - though the East Asia Summit might evolve into this role over coming years; the Chiang Mai Initiative established by ASEAN+3 for cooperation in crisis financing; the G-20 which includes the major East Asian economies and is a forum for driving the international economic and financial agenda; and the Asian Bond Fund to deepen regional capital markets and increase countries' capacities to

[48] For example, the recently established Global Fund has $US6.9 billion proposals already approved.

borrow in their own currencies.[49] An Asian Monetary Fund to promote regional financial and economic stability has also been mooted several times and no consensus to establish such an institution has been reached.[50]

Bilateral

5.13 At the bilateral level, several changes can be expected over the coming decade. Amongst traditional Western donors, there will be a consolidation of donor coordination and harmonisation, as per the Paris Declaration on Aid Effectiveness. This welcome move may occur just as some of the traditional European donors think about exiting programs to countries like Vietnam. On the other hand, new non OECD donors will continue to emerge in Asia. China already is emerging as a potentially significant aid donor[51] and South Korea has been an aid donor for some time. Thailand is likewise emerging as a bilateral donor and Vietnam became a donor to the World Food Program in 2005. These trends are likely to increase over the coming decade.

Non traditional

5.14 Asia will also see dramatic changes in the nature of development and broader capital financing over the coming decade. Foreign direct investment is likely to continue to be a major source of finance[52] for the region, although concentrated in certain countries and bypassing fragile states and poorly managed countries. However non-traditional sources of development—for example remittances and migration—will also be increasingly important. In 36 countries worldwide already, remittances are greater than all other sources of financial capital combined.[53] This is particularly true for the Philippines, where almost one-quarter of the domestic labour force works overseas, worker remittances total around US$7 billion per year, and remittances represent nine per cent of GDP and are six times larger than foreign direct investment.[54]Remittances are also important for other countries in Asia such as Bangladesh, Indonesia, Nepal and Sri Lanka.

5.15 While large and growing, the economic impact of remittances is ambiguous.[55] Large flows may dull the demands for reform by poor communities on their national governments: some communities in the Philippines are more dependent on the quality of economic growth and economic governance in the United States, Japan, and Hong Kong than they are of their own country. Such large cross border flows of people and money

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[49] Martin Parkinson, Steve Kennedy and Gordon de Brouwer, 'Economic growth stresses and opportunities in the Asia/Pacific, Address to the Leading Australia's Future in Asia Program. ANU. 28 June 2004. Page 15. Peter Costello, 'Australia and the Asia-Pacific: Moving forwards as partners, Address to The Macroeconomic Policy and Structural Change in Asia Conference, Sydney, 24 February 2005.

[50] Gordon de Brouwer, 'Institutions to promote financial stability: Reflections on East Asia and an Asian Monetary Fund', Treasury Working paper, February 2004, September 2004. Page 21.

[51] Dragon in Paradise: China's Rising Star in Oceania. John Henderson and Benjamin Reilly. The National Interest. Summer 2003.

[52] Asia and the Pacific region recorded more than US$166 billion in foreign direct investment in 2004.

[53] The Future of Aid 1. World Bank Public Policy for the Private Sector. March 2005. And by 2020 remittances from developing countries could reach US$200 billion, dwarfing ODA, as workers fill the demographic deficit of richer, aged, OECD countries.

[54] Migration and Foreign Remittances in the Philippines Burgess and Haksar. IMF Working Paper WP/05/111. June 2005.

[55] Remittances As Development Finance. Mimeograph available from OECD Development Assistance Committee website. See also Migration and Foreign Remittances in the Philippines.

also raise security questions and facilitate the spread of HIV/AIDS. Some development agencies anticipate the increased role of remittances in development generally and are working on how they can improve the development impact of such flows.[56] Australia could do more here too. A good start would be to gear up research on and the analytical base of trends and consequences of remittances in the region.

Australian aid

5.16 All of this has implications for Australian aid. The rapidly evolving 'aid architecture' in Asia suggests Australian aid must continue to be flexible and opportunistic if it is to retain its relevance and impact in the region. But flexibility needs to be balanced against the risk of an aid program being simply reactive and dissipating its efforts across the welter of challenges that will continue to emerge in Asia. Several informed stakeholders in the region have argued that if Australia is to maximise its development impact it must identify key priority issues and stick with them. Development is a long-term process, and reform takes longer than a typical three-year project horizon.[57] Above all, Australia was urged to avoid the temptation of chasing development fads.

5.17 How Australia might balance this need for strategic focus in a region as large as Asia, while maintaining flexibility in a rapidly changing environment is addressed in the next section.

Country strategies

6.1 Previous sections have looked at the what and how issues of a modern development program to Asia. This final section looks at where issues. This does not mean individual country-by-country recommendations for each country in Asia—space limitations prevent that. In any event, recommendations made now about country priorities will inevitably change in a region as vast and varied as Asia: reformist governments—or state collapse—in North Korea or Burma over the coming decade would likely see a rapid scaling up of Australian assistance to those countries and a reordering of country allocation priorities. With these comments in mind, these recommendations are made.

Indonesia

6.2 First, Indonesia should continue to be Australia's major development partner in Asia. The reason is obvious. Indonesia has major development needs: for example just over half of the population lives on less than US$2 per day; less than 20 per cent of households have access to piped water; and only 40 per cent of those eligible are enrolled in senior high school.[58] That is reason enough for an active aid program. But these deep development needs are overlaid by Australia's own national interests which are closely intertwined with Indonesia being stable, prosperous, and well governed. The path

[56] See Remittances As Development Finance. Mimeograph available from OECD Development Assistance Committee website. See also Sending Money Home? A Survey of Remittance Products and Services in the United Kingdom. DFID and Banking Code Standards Board. 2005.
[57] The 2004 Review of ADB's Poverty Reduction Strategy notes, for example, that on average 'roads have a seven-year lag from an increase in expenditure; expenditure an 11-year lag, and research and extension 13 years before actual impacts can be achieved'.
[58] Indonesia: New Directions. . World Bank CGI brief. . January 2005. . Pages 8 and 73.

Indonesia follows over the coming decade will affect not just the fourth largest country in the world, and Australia's nearest neighbour, but the pattern of development in South-East Asia generally. It is therefore in Australia's national interest to have active, broad engagement in the development of Indonesia. The issue is sufficiently important that there is a separate, stand alone, chapter prepared on Indonesia for the White Paper.

East Timor

6.3 Despite obvious differences, similar principles apply in East Timor: there is a conjunction between deep development needs, proximity and broad Australian national interests. More specifically, East Timor is a Least Developed Country with a non-petroleum GDP per capita of just US$366; a well regarded and prudent approach to managing potentially large oil revenues but severe institutional and capacity constraints; and the world's highest fertility rate of 7.8 children per woman.[59] East Timor also faces the potentially explosive challenge of youth employment, with all the implications this has for social tension and political instability near to Australia.

6.4 Development need, proximity, and breadth of national interest would therefore again suggest that Australia has a broad spectrum, long term, and substantial program to East Timor. A strategic vision for this program over the coming decade would involve three pillars. The first pillar is a focus on maintaining stability in East Timor through support for its institutions of governance and the police. The second pillar would be developing human capacity in East Timor—an area of acute need and a significant constraint to economic growth and development on all other fronts. This would include support for basic, secondary and vocational education, as well as continuing to offer scholarships to Australian institutions. The third pillar involves improving viable youth employment by working more directly and innovatively to help build a vibrant private sector and giving more attention to employment intensive approaches to infrastructure investments, especially in rural environments.

Phillipines

6.5 Development need, proximity, and national interest—especially security interests— would suggest that Australia give much more attention to the Philippines—especially Southern Philippines. Fourteen of the 20 poorest provinces in the Philippines are in Mindanao, and the incidence of poverty—already the highest in the Philippines—has increased from 56 per cent in the early 1990s to more than 70 per cent in 2000.[60] This development challenge also overlaps with important security challenges: one World Bank research paper concludes that the Mindanao conflict, having persisted for five centuries, is now the second oldest on earth after Sudan; that there have been more than 120,000 conflict related deaths in Mindanao since the 1970s; and an estimated $US2 to $US3 billion in direct economic costs.[61] The insurgent groups Abu Sayaff and the Moro Islamic Liberation Front have links with Jemaah Islamiah, and Abu Sayaff has links with Al Qaeda. The promotion of stability in Southern Philippines is essential to attract investment and reduce the linkages with regional and international terrorism.

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[59] Source: World Bank at www.worldbank.org/timorleste

[60] The Mindanao Conflict in the Philippines: Roots, Costs, and Potential Peace Dividend. Salvatore Sciavo—Campo and Mary Judd. The World Bank. Social Development Papers: number 24. February 2005.

[61] The Mindanao Conflict in the Philippines. Op cit. Page 5.

6.6 Four specific interventions would make a strategic impact in the Southern Philippines—albeit over a long-term horizon.

6.7 The first is education, which is the foundation of development, good governance, and employment—all of which CAN help reduce a sense of alienation and the appeal of terrorism. The Philippines has many challenges here: as just one example it has slipped to a ranking of 42 and 43 out of 46 countries in mathematics and science.[62] Particular challenges arise in Southern Philippines: enrolment rates for secondary schools in the Autonomous Region of Muslim Mindanao (ARMM) were just 32 per cent, and fewer than two in ten children who enter grade one in ARMM complete high school.[63]

6.8 Australia already has a good model for strengthening and broadening educational opportunities for Muslim children in Southern Philippines, including improving the professionalism of teachers and upgrading physical facilities of schools. The approach adopted under the AusAID-supported Basic Education Assistance to Mindanao (BEAM) is so successful that it is being scaled up and rolled out nationally. More assistance in this area would seem justified.

6.9 The second area involves a focus on women as potential peace builders. Like young people, women can be agents of change in society, demanding reform and an end to conflict. Such an approach could draw on the role of women's groups in helping to end hostilities in Bougainville and Solomon Islands, and involve support for women's groups to create a demand for long-term peace and better governance in Mindanao.

6.10 The third area involves creating viable employment opportunities, thereby giving young men a stake in their own society. This, of course, is a long-term prospect and challenging, especially given lack of investment in the area and the weak and generally declining competitiveness of the Philippines (Table Two). And there are limits to what an aid program can do to create employment. The promotion of stability—a precondition for investment, economic growth and employment creation—is one area in which aid can assist.

6.11 The fourth area involves continued support for the peace process in the Southern Philippines, to lessen the instability affecting many lives and being exploited by external terrorist operatives. And continuing to build local security infrastructure, including policing, counter-terrorism and border security capacity, will help promote stability and is in Australia's direct security interest.

6.12 The challenge for Australia is how to engage in this part of the Philippines which, in many ways, represents a failed state where basic security of aid personnel is at question. This also offers real opportunities for innovative designs and approaches: more will have to be done with and through local counterparts and NGOs, and less through expatriate consultants—an approach that, in itself, could be effective.

6.13 There is also scope to help build demand for better governance in the Philippines more broadly, through supporting potential agents for change such as womens' groups.

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62 Education Reforms in East Asia: Policy Process and Impact. East Asia Decentralises. World Bank. Page 181.
63 Education Reforms in East Asia: Op cit. Pages 193 and 194.

Mekong countries

6.14 Further North are the Mekong countries. To have impact in this region over the coming decade a development strategy will need to take into account the following. First, the region is highly diverse and changing rapidly: in a decade's time there will still be a need for a development program with Cambodia, and Lao PDR, but this is unlikely to be the case with Thailand. The engagement strategy will also need to keep pace with the rapidly changing nature of Vietnam. Second, Australia is just one of a number of developed countries active in the region, so how to work with others, and have impact ourselves, will be different to working in, say, Melanesia. The third factor is the geographical proximity of these countries to fast growing China and India, and the range of social and economic consequences likely to arise over the coming decade from the dynamic changes in those two countries.

6.15 Australia has a broad range of development and national interests at play in these countries. But if Australia is to have identifiable impact in this region it must be increasingly selective, choose a few core areas, stick with them, and then work assiduously with bilateral and multilateral agencies to leverage up our impact. The self reinforcing package of interventions outlined in paragraphs 7.4 and 7.5 would maximise Australia's impact. Australia must avoid having a range of isolated or fragmented activities that last only a few years and are then replaced by activities in new sectors.

6.16 One specific initiative where Australia could help shape areas of major strategic impact is the Greater Mekong Subregion (GMS). This grouping of six countries[64] covers some 300 million people most of whom have a per capita income of US$1 per day. [65] The ADB is an active supporter of this grouping and helps facilitate activities in agriculture, energy, the environment, human resource development, investment, telecommunications, tourism, trade, and transport. The GMS offers an entry point to a region that is large, poor, facing major internal and cross-border challenges with the potential to affect Australia (such as environmental problems and transnational crime), and where well designed aid interventions from Australia could have disproportionately large impact.

China, India and South Asia

6.17 Should Australia be providing aid to China and India in the coming decade? Many would argue that, with their size and rapid growth, aid to these two giants is no longer appropriate. After all, China's GDP is already larger than that of Italy, will overtake that of France this year, and will probably overtake that of Germany by 2007.[66] Similarly, India's economy is projected to overtake Japan's in the next five years to become the third largest in the world.[67] At a simplistic level it is hard to see how resource

[64] Cambodia, China, Lao PDR, Myanmar, Thailand, and Vietnam.

[65] ADB website: Greater Mekong Subregion.

[66] Goldman Sachs Global Economic Paper. Op cit. China is also projected to be the third largest economy after the United States and Japan by 2015 and, even with growth rates slowing to 3.5 per cent by the mid 2040s, the world's largest economy by 2041. While China and India's emergence as global—not just regional—economic powers is impressive, it does not mean they will come to the table as 'wealthy' as the countries they displaced. Even by 2050 China's GDP per capita is projected to be just US$31,357 (2003 constant dollars) and India's just US$17,366 compared to that of the United States of US$83,710 and Japan's of US$66,805.

[67] A Tripolar World: India China and the US. Arvind Virmani. Indian Council for Research on International Economic Relations. May 18 2005.

transfers through Official Development Assistance (ODA) can make a difference in such large economies: China's foreign exchange reserves are now reportedly growing at US$570 million per day or US$24 million per hour[68]—not a lot short of what Australia provides per year in aid. Indeed, China and India are active providers of bilateral and multilateral aid in their own right.

6.18 There are, however, two reasons why Australia should continue to have a development program with China and India—albeit one that is more forward looking and appropriate to the changing and contemporary realities of these countries.

6.19 The first is development need. Despite their rapid growth, China and India account for 40 per cent of the developing world's population.[69] An estimated 212 million people lived below the US$1 a day poverty line in China in 2001[70] and China still has an estimated 594 million below the US$2 a day line. China also has major social challenges to confront, one symptom of which is the estimated 156,841 women committing suicide every year: 56 per cent of all female suicides in the world.[71]

6.20 India has similar challenges. As of 2001, per capita gross national income was just US$460, and more than one-quarter of India's population still live below the country's poverty line. As the World Bank notes: 'This means that, with the world's second largest population—over one billion—India is home to over one third of the world's poor people.'[72]

6.21 In short, East and South Asia is still the epicenter of poverty and development need in the world.

6.22 However an even more telling reason for continuing—but modernising—Australia's program to China and India is Australia's own national interest. A continued focus by China and India on economic reform, broad based and sustainable economic growth, and social and political stability will directly affect the prosperity and stability of one-third of the world's population living within their borders. It will also be a principal determinant of the pace and pattern of economic growth and stability in the region. It is therefore in Australia's national interest to use every instrument available to it—including the aid program—to help sustain the momentum of positive reform by those two giants. It makes no sense for Australia to disengage from the two largest drivers of growth and security in the region over the coming decade.

6.23 Five things need to occur if Australia is to make an impact on the directions China and India might take in the coming decade. First, any development program must be highly selective and essentially built around one, or at most two, central themes or flagships known to be of top priority to the leadership group of those two countries. Second, the flagship must be large enough in size; innovative enough in scope; and long

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68 Money's On August Revaluation in the Australian Financial Review. 19 July 2005. Page 11.
69 Economic Growth in the 1990s. Op cit. Page 7.
70 World Development Indicators 2004. Page 3.
71 China 2001-2010: Political Economic and Social Issues of Reform and Transformation. FitzGerald, Davies and Tang. Page 50.
72 India is still home to the world's largest number of illiterate people and accounts for 20 per cent of the world's out of school children and for 20 per cent of the gender gap in elementary education. Maternal deaths in India account for almost 25 per cent of the world's childbirth related deaths.[72] Similar challenges arise in the rest of South Asia.

enough in duration, to gain the attention of the leadership groups in these countries, particularly so with India.[73] (Having said that, it is also clear that the aid budget is finite and priorities have to be set. The convergence of development needs, geographical proximity, and the breadth and depth of national interests at stake suggest that Indonesia, East Timor and the Philippines will usually get first priority from Australia.) Third, a flagship must be as much about ideas as about finances. Fourth, all components of development cooperation, including scholarships, analytical research and think tanks, Australian engagement with the World Bank and the ADB, must be managed so they work in harmony and reinforce each other. Fifth, a traditional donor-recipient model needs to rapidly change to a more partnering approach to reflect the capacity and sophistication of China and India.

6.24 Numerous options are available to the Australian Government. The boldest—yet possibly the most cost effective and high-impact—is sketched out here.

A bold proposal: a single flagship for China and South Asia for the coming decade

> Australia chooses one strategically important issue that is a core priority for development across East and South Asia and which aligns with its comparative advantage and national interests. This might be the technical, scientific and policy aspects of clean energy and greenhouse gas emissions. It might be an aspect of economic policy and governance, such as public-private partnerships for infrastructure funding. It might be girls' education and/or professionalising basic education across the region through to Pakistan. It might be work on pandemics, including HIV/AIDS or TB.
>
> Over time, Australia consolidates its funding efforts around this flagship. By way of illustration, if all of Australia's current aid program to China and South Asia were consolidated, there would be a flagship intervention worth around AUS$94.4 million, or AUS$940 million in current dollars over ten years. This, by itself, would have more impact than a series of fragmented bilateral programs.
>
> The impact would be enhanced by the overlapping and reinforcing components that would come with a scaled up and single focus initiative: a large scholarships program would build a critical mass of leaders in the region trained in Australia and networking with each other. The returning scholars would link up with research institutes, think tanks, and broader whole-of-government initiatives that AusAID was supporting under the flagship. The ideas and reforms being generated by this interaction would also feed into, and itself by influenced by, the analytical, policy and operational programs of the World Bank and ADB in that area.
>
> Such a model gives strategic focus, but also enables flexibility to respond to changing circumstances. For example the degree of focus, and the intellectual leadership role taken by Australia under this flagship model,

73 The level of Australian aid and broader engagement with India has gone through cyclical peaks and troughs over the decades. Separately, India has recently decided to limit its aid relations to countries with larger programs, to reduce transaction costs and fragmented efforts. Any decision to re-engage with India would need to take this into consideration.

would enable a range of ongoing, well grounded, new initiatives to be developed for consideration by the Australian Government, each of which could meet the changing needs of the time or the country concerned. If necessary, a separate but relatively small rapid response facility could be available to allow Government to pursue initiatives outside of the single flagship—but without detracting from or diluting it.

6.25. Numerous and less radical permutations are also possible. Government might choose to have, for example, two larger, longer term flagship programs to India and China: one on the high tech side dealing with clean and efficient energy/global warming and the other on the humanitarian side dealing with girls' education. Alternatively, one flagship could be economic governance and reform, and the other HIV/AIDS. The key is to have a focus, and then stick with it. A ten-year focus on two important streams would have impact, and balance and introduce further substance and ballast into the bilateral relationship with these two countries. Such a program could also be supplemented by a regional program for the other countries of Asia (Sri Lanka, Bangladesh, Pakistan, Nepal, Bhutan, and Maldives).

Resource implications

7.1 Moving Australia's aid program upstream in the way outlined in this paper has resource implications for AusAID, other Australian Government departments, and Australian research institutions and universities. Aid is a finite resource and its development effectiveness needs to be regularly assessed and the lessons learnt better identified, disseminated and digested by development agencies, partner governments, and other stakeholders. If development shifts to a more upstream and analytical approach over the coming decade, there will also be resource implications for AusAID staff. This might include the need to develop even stronger analytical and technical skills—or ready access to those skills—to be able to engage productively with national counterparts, research institutions, the World Bank, and ADB.

Conclusion

8.1 The strategic starting point for this paper is that Asia is large, varied and changing rapidly. Growth will be an essential pre-condition—but not a guarantee—of poverty reduction, as well as stability in the region and beyond. Australia's national interests are inextricably bound up in the path of economic and social development of Asia over the coming decade. Australia's aid program, as part of a whole-of-government engagement in the region, can help shape the response to the challenges of the coming decade.

8.2 Achieving impact in such a large and varied region as Asia is a challenge. Several recommendations are made.

8.3 First, in terms of sectors, Australia should further consolidate its efforts in economic governance, emphasising links to service delivery and the environment for the private sector. Opportunities exist for significant scaling up of existing work in health, education and rural development. And if Australia is to help shape some of the main drivers of change in Asia in the coming decade, it should also consider new fields like physical infrastructure and political governance.

8.4 Second, the ten-year timeframe of the White Paper is an opportunity for Australia to be much more strategic and forward looking in the way it delivers aid in the region. Australia should invest more attention and resources into its relations with the multilateral development banks to help shape the way these much larger institutions engage in Asia. Linked to this, Australia should give even greater priority over the coming decade to generating ideas and applied research about development, which can empower reformers in Asia to themselves push forward. This should be complemented with an expanded scholarships program, as well as stronger institution-to-institution links, to help build a critical mass of reform from within. And Australia should look carefully at the rapidly evolving aid architecture in Asia and work more closely with institutions that will shape the economic, social and development agenda in Asia over the coming decade.

8.5 These components—expanded scholarships, improved institution-to-institution links, generating ideas and research, working more closely with multilateral development banks and new institutions—complement and reinforce each other. They work best as a self reinforcing package. And, with adaptation to individual country circumstances, the package works well in fast growing large economies, smaller fragile states, and the range of countries in between.

8.6 Third, Australia should be focused and strategic in its choices about operating at a country level. Indonesia, East Timor, and, to an extent, the Southern Philippines share the characteristics of particularly strong development needs, proximity and a dense web of Australian national interests. That would suggest tailored country programs that might be reasonably large (Indonesia), broad based (East Timor) or innovative (southern Philippines). As the spotlight moves further North and West—through the Mekong countries and into the larger domains of China and South Asia—the need for strategic focus becomes even more pressing. There are ways of getting focus and impact in these regions, but this involves being increasingly selective and sticking with an area for longer periods. It also involves working creatively with large stakeholders such as the multilateral banks.

8.7 The package of approaches in this paper will give focus, coherence and strategic direction to Australia's aid program to Asia over the coming decade. But it will also enable the program to be sufficiently flexible and responsive to the varied, and rapidly changing, countries of Asia.

Glossary

ADB	Asian Development Bank
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of South East Asian Nations
BEAM	Basic Education Assistance to Mindanao
GMS	Greater Mekong Subregion
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IMF	International Monetary Fund
LICUS	Low Income Country Under Stress
MILF	Moro Islamic Liberation Front
ODA	Official Development Assistance
WTO	World Trade Organization

Appendix 4

A

Flash Eurobarometer

European Commission

Flash Eurobarometer 253 – The Gallup Organisation

Survey on Tobacco

Analytical report

Fieldwork: December 2008

Publication: March, 2009

This survey was requested by the Directorate General Health and Consumers, and coordinated by Directorate General Communication.

Flash EB Series #253

Survey on Tobacco

Conducted by
The Gallup Organisation, Hungary
upon the request of Directorate General
Health and Consumers

Survey co-ordinated by
Directorate General Communication

THE GALLUP ORGANISATION

Table of contents

Introduction

Tobacco is the single largest cause of avoidable death; it accounts for over half a million deaths each year in the EU. It is estimated that 25% of all cancer deaths and 15% of all deaths in the Union could be attributed to smoking[1].

In order to curb this epidemic, the EU is actively developing a comprehensive tobacco control policy. This is characterised by legislative measures, support for Europe-wide smoking prevention and cessation activities, mainstreaming tobacco control into a range of other Community policies (e.g. the domains of agriculture, taxation and development) and, finally, establishing the EU as a major player in tobacco control at a global level[2].

The current Flash Eurobarometer on Tobacco (Flash N₀ 253), requested by the Directorate General Health and Consumers, was conducted to evaluate the EU citizens' and Norwegians' attitudes towards tobacco.

In detail, the survey examined the:

- smoking habits and consumption of non-combustible tobacco products
- exposure to tobacco smoke at home and at the workplace
- status of workplace smoking restrictions
- attitudes towards smoking restrictions in public places
- perceived effectiveness of health warnings on tobacco packs
- extent of tobacco products being bought online
- purchasing of lower-priced cigarettes in other EU countries
- amount of contact with potentially smuggled tobacco products

Other surveys on this topic were conducted in 2002 (Special Eurobarometer 183[3]), 2005 (Special Eurobarometer 239[4]) and 2006 (Special Eurobarometer 272c[5]). Although the current survey builds on these earlier ones, it is different in several ways: Flash Eurobarometer 253 has covered different countries than the previous ones, the questionnaire has been re-designed and telephone interviews have replaced face-to-face discussions.

The Flash Eurobarometer on Tobacco (Flash N₀ 253) fieldwork was conducted between 13 and 17 December 2008. Over 26,500 randomly-selected citizens aged 15 years and over were interviewed in the 27 EU Member States and in Norway. Interviews were predominantly carried out via fixed-line telephone, reaching ca. 1,000 EU citizens in each country (in Cyprus, Luxembourg and Malta the targeted size was 500). Parts of the interviews in Finland, Austria, Portugal and Italy were conducted over mobile telephones. Due to the relatively low fixed-line telephone coverage in Bulgaria, the Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Romania and Slovakia, 300 individuals were sampled and interviewed on a face-to-face basis.

To correct for sampling disparities, a post-stratification weighting of the results was implemented, based on key socio-demographic variables. More details on the survey methodology are included in the Annex of this report.

Please note that due to rounding, the percentages shown in the charts do not always exactly add up to the totals mentioned in the text.

1 http://ec.europa.eu/health/ph_determinants/life_style/Tobacco/tobacco_en.htm
2 Ibid.
3 http://ec.europa.eu/public_opinion/archives/ebs/ebs_183_en.pdf
4 http://ec.europa.eu/public_opinion/archives/ebs/ebs_239_en.pdf
5 http://ec.europa.eu/public_opinion/archives/ebs/ebs_272c_en.pdf

Main findings

Smoking habits and consumption of non-combustible tobacco

- Three out of 10 EU citizens aged 15 and over say they smoke: a quarter (26%) smoke daily and 5% occasionally. Men, the 25-54 year-olds and manual workers are the most likely to be daily smokers.
- Almost half of EU citizens claim that they have never smoked and 22% say they have quit smoking.
- The proportion of smokers is the highest in Greece (42%), followed by Bulgaria (39%), Latvia (37%), Romania, Hungary, Lithuania, the Czech Republic and Slovakia (all 36%).
- One-tenth of respondents (9%) have at least once in their life tried non-combustible tobacco products. Only 2% use such products at present time, either every day or occasionally (both 1%). Slightly more than one-tenth (14%) of the Swedes and 9% of Norwegians use such products either every day or occasionally.

Exposure to tobacco smoke at home and at the workplace

- Fourteen percent of non-smokers and 23% of smokers are exposed to other people's tobacco smoke at home on an almost daily basis.
- Home exposure to environmental tobacco smoke (ETS) is the lowest in Finland and Sweden - not more than 5% of Finns and Swedes are regularly exposed to other people's tobacco smoke at home. Lithuanians, Cypriots, Greeks and Bulgarians are six times more likely to be exposed to ETS at home.
- More than a third of smokers in the EU expose others to ETS at home. The proportion of smokers who expose others to tobacco smoke at home ranges from 8% in Finland to half of the smokers in Poland, Greece, Bulgaria and Denmark.
- A fifth of respondents working outside the home have to do so in places where they are exposed to tobacco smoke on a daily basis - over half of them for at least one hour a day.
- In Greece, six out of 10 working respondents are exposed to smoke at their workplace on a daily basis. Nine out of 10 working respondents in Sweden, the UK and Finland are never, or hardly ever, exposed to tobacco smoke at work.

Status of workplace smoking restrictions

- Seventeen percent of EU citizens - who work at an indoor facility - say there are no restrictions, or only very weak restrictions on smoking in their workplace.
- More than six out of 10 Greek respondents (62%) report no or only weak restrictions on smoking in their workplace, followed by 47% of Bulgarians and 41% of Lithuanians and Cypriots. In Sweden, France and the UK, less than one-tenth of interviewees say that this is the case at their workplace.
- Working in an area where smoking is not restricted is more likely to occur for men, the over 54s, those with the lowest levels of education, the self-employed and manual workers.

Attitudes towards smoke-free public places

- A majority of EU citizens support smoke-free public places, such as offices, restaurants and bars. Support for workplace smoking restrictions is slightly higher than support for such restrictions in restaurants (84% vs. 79%). Two-thirds support smoke-free bars, pubs and clubs.

- Support for smoking restrictions in public places is the highest in Italy and Sweden, while the Czechs, Austrians and Dutch are each time found to be among the least supportive of such restrictions.
- Smoke-free public places, such as offices, restaurants and bars, receive more support among non-smokers than among smokers. Half of the smokers are in favour of smoking restrictions in bars compared to seven out of 10 non-smoking respondents.

Perceived effectiveness of health warnings on tobacco packs

- Three out of 10 EU citizens think that health warnings on tobacco packs are effective in informing them about the health effects of tobacco.
- Three out of 10 non-smokers perceive health warnings as being effective in preventing them from smoking and a fifth of smokers think the warnings are effective in persuading them to smoke less or to quit.
- Respondents in Romania, Ireland, the UK and Lithuania perceive health messages as being more effective than their counterparts in the other Member States.
- Younger respondents, the less-educated respondents and manual workers across all groups - those who have never smoked, former smokers and current smokers - appear to be slightly more likely to perceive health warnings on tobacco packs as being effective.
- Adding a colour picture to a text-only health warning is perceived as being effective by more than half of EU citizens: 20% say this would be very effective and 35% think it is somewhat effective.

Extent of tobacco products being bought online

- Less than 1% of EU citizens surveyed have ever purchased tobacco products over the Internet. This percentage is slightly higher among respondents who have tried non-combustible tobacco products - 3% of them have bought non-combustible tobacco over the Internet and 2% have bought other tobacco products online.

Purchasing of lower-priced cigarettes in other EU countries

- One-tenth of EU citizens participating in the survey have bought lower-priced cigarettes in another EU country in the year prior to the survey.
- Among the respondents who made a trip to another EU country, one-third brought home lower-priced cigarettes; British, French and Italian respondents are the most likely to have done so (between 63% and 70%).

Contact with potentially smuggled tobacco products

- Over one-tenth of EU citizens (12%) have seen tobacco products being sold in the past six months which they think might have been smuggled into the country.
- There are national variations, however: the proportion that has been in contact with potentially smuggled tobacco products in the past six months is the highest in Lithuania (36%) and the lowest in Belgium (4%).

1. Smoking habits

Three out of 10 EU citizens aged 15 and over say they smoke: a quarter (26%) smoke daily and 5% occasionally. Men, the 25-54 year-olds and manual workers are the most likely to be daily smokers.

Almost half of EU citizens claim that they have never smoked and 22% say they have quit smoking.

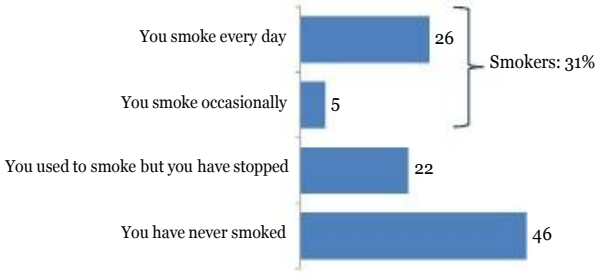
The proportion of smokers is the highest in Greece (42%), followed by Bulgaria (39%), Latvia (37%), Romania, Hungary, Lithuania, the Czech Republic and Slovakia (all 36%).

One-tenth of respondents (9%) have at least once in their life tried non-combustible tobacco products. Only 2% use such products at present time, either every day or occasionally (both 1%). Slightly more than one-tenth (14%) of the Swedes and 9% of Norwegians use such products either every day or occasionally.

1.1 Smoking cigarettes, cigars or pipe

Three out of 10 EU citizens aged 15 and over say they smoke[6]: 26% smoke daily and 5% occasionally. Almost half (46%) of the respondents claim that they have never smoked and 22% say they have quit smoking.

Smoking cigarettes, cigars or pipe



Q1. Regarding smoking cigarettes, cigars or a pipe, which of the following applies to you?
Base: all respondents
% EU27, DK/NA not shown

Country variations

Current smokers

The proportion of respondents who say they smoke is the highest in Greece (42%), followed by Bulgaria (38%), Latvia (37%), Romania, Hungary, Lithuania, the Czech Republic and Slovakia (all with 36% saying they are smokers). Respondents in Slovenia (22%), followed by those in Sweden and Finland (both 25%), are the least likely to be smokers.

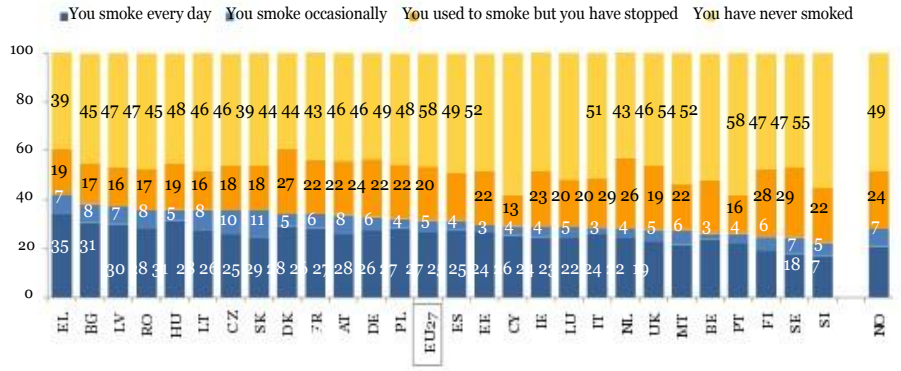
Similarly, the proportion of interviewees who smoke daily ranges from approximately one-sixth in Slovenia (17%), Sweden (18%) and Finland (19%) to more than one-third in Greece (35%). The

[6] The validity of self-reported smoking, especially in phone interview situations, is sometimes questioned because of the widespread belief that smokers under-report the amount smoked or deny smoking completely. Since social norms do not view smoking as a desirable behaviour, a social desirability bias would result in underestimates of actual smoking habits.

proportion of occasional smokers ranges from 3% in Belgium, Italy and Estonia to one-tenth in the Czech Republic (10%) and Slovakia (11%).

A large majority of smokers in the EU say they smoke daily (84%); the share of regular smokers - among all smokers - ranges from 70% in Slovakia to 90% in Belgium, Italy and Estonia.

Smoking cigarettes, cigars or pipe



Q1. Regarding smoking cigarettes, cigars or a pipe, which of the following applies to you?
Base: all respondents
% by country, DK/NA not shown

Those who have never smoked

In a few countries, more than half of the respondents claim that they have never smoked: Cyprus and Portugal (both 58%), followed by Slovenia (55%), Malta (54%), Belgium and Luxembourg (both 52%) and Italy (51%). In Greece and Denmark, on the other hand, only four out of 10 interviewees say they have never smoked (both 39%).

Former smokers

Although the Danes are among the least likely to have never smoked (see above), the proportion of smokers in that country is only slightly above the EU average (34% vs. 31%) - more than a quarter (27%) of the Danish respondents say they have quit smoking. It is, however, the Swedes, Finns and Dutch who are the most likely to have quit smoking (28%-29%).

Socio-demographic considerations

More men than women say they smoke every day (32% vs. 21%), although a similar proportion of men and women say they only smoke occasionally (6% and 5%, respectively). Furthermore, women are more likely to have never smoked (55% vs. 37%), while men are more likely to have quit smoking (26% vs. 19%).

Only 18% of the oldest respondents (over 54) are smokers - non-smokers have a statistically higher chance to reach old age. Of the 25-39 year-olds, slightly more than four out of 10 are smokers: 36% smoking daily and 6% occasionally. Similarly, 35% of the 40-54 year-olds smoke daily and 5% only occasionally. Respondents between 15 and 24 are the most likely to be occasional smokers (9% vs. 23% who smoke daily). Furthermore, the 15-24 year-olds are the most likely to have never smoked (60% vs. 46% average), while the over 54s are the most likely to have quit smoking (32% vs. 22% average).

A similar pattern of differences occurred when looking at the age that respondents left the educational system. Those still in education - and thus being younger than respondents in the other groups - are less likely to be regular smokers, but more likely to be occasional smokers (9% vs. 5% average).

Respondents with the lowest levels of education - of which a majority are older than 54 - are among the least likely to smoke (24% vs. 31% average).

Within the group of 15-24 year-olds, the most-educated respondents are less likely than those with lower levels of education to say they smoke daily or occasionally (32% compared to 42% of the least-educated respondents). The same overall pattern is found within the group of 25-39 year-olds: while only 36% of the most-educated respondents are regular or occasional smokers, almost half of those with lower levels of education smoke (47%-48%). In the age groups over 40 year-of-age, smoking habits do not show many difference when looking at the respondents' level of education.

Manual workers are the most likely to smoke regularly (43%), followed by the self-employed (36%), while the non-working respondents are the least likely to do so (19%). Similar proportions of respondents in the different occupational groups say they smoke occasionally (4%-7%). Looking at the respondents who do not smoke, the self-employed are more likely to have quit smoking (24% vs. 19% of manual workers) and the non-working respondents to have never smoked (54% vs. 33% of manual workers).

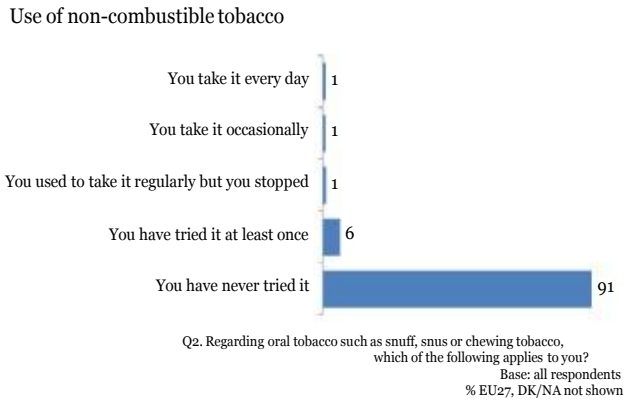
Smoking habits do not show many differences when looking at the respondents' place of residence.

For more details, see annex table 1b.

1.2 Consumption of non-combustible tobacco

One-tenth of EU citizens have at least once in their life tried non-combustible tobacco products such as snuff, snus or chewing tobacco. Only 2% use such products at present time, either every day or occasionally (both 1%).

Note: Currently within the EU, Directive 2001/37/EC on the Manufacture, Presentation and Sale of Tobacco Products bans the marketing and sales of snus and moist snuff; chewing tobacco and nasal snuff are permitted.



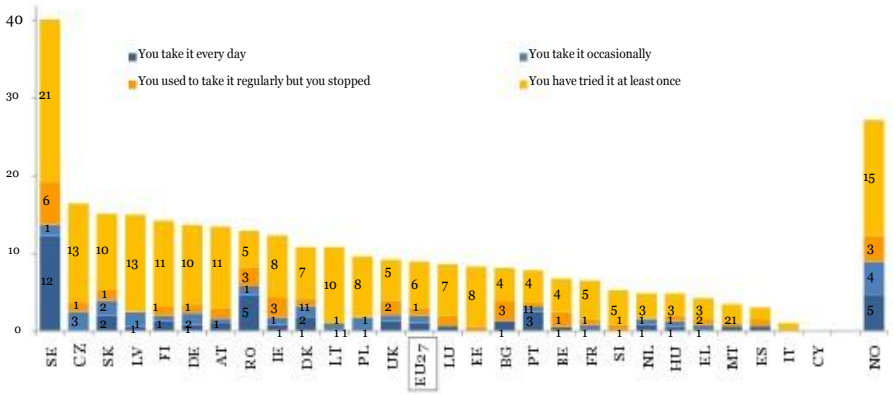
Country variations

In almost all Member States, a very small percentage (0%-2%) of respondents currently use non-combustible tobacco products and only a minority have tried such products at least once (ranging from virtually none of the respondents in Cyprus to 13% in Latvia and the Czech Republic). In the Czech Republic, Portugal, Denmark, Slovakia and Romania between 3% and 6% of respondents use non-combustible tobacco products either every day or at least occasionally.

Sweden and Norway stand out from the pack - 40% of Swedish respondents and 27% of Norwegians have taken snuff, snus or chewing tobacco at least once in their life. Slightly more than one-tenth (14%) of the Swedes and 9% of Norwegians use such products either every day or occasionally.

Note: Although snus and moist snuff are prohibited in the EU, article 151 of the Act of Accession of Austria, Finland and Sweden granted the Kingdom of Sweden a derogation from the provisions of Directive 2001/37/EC. Norway, a member of the European Economic Area (EEA) is also exempt from the ban on the marketing of snus and moist snuff on the basis of the EEA Agreement.

Use of non-combustible tobacco



Q2. Regarding oral tobacco such as snuff, snus or chewing tobacco, which of the following applies to you?
Base: all respondents
% by country, "You never tried it" and DK/NA not shown

Socio-demographic considerations

Given that only a minority of the respondents have tried non-combustible tobacco, and even less respondents actually use it, not many differences are observed across socio-demographic groups. Men are slightly more likely to have tried non-combustible tobacco (9% vs. 3% of women) and respondents who smoke are also more likely to take non-combustible tobacco occasionally or even regularly (5% vs. 2% of former smokers and 0.3% of those who have never smoked).

Focusing only on the results for Sweden - which has the highest proportion of non-combustible tobacco users - it is noted that not only men (25% vs. 3%), smokers and former smokers (23% and 19%, respectively, vs. 6% of those who have never smoked) are more likely to take non-combustible tobacco occasionally or regularly, but also the 25-54 year-olds (17%-19% vs. 13% of 15-24 year-olds and 9% of the over 54s), the less-educated respondents (18%-19% vs. 11% of the most-educated respondents, manual workers (46% vs. 13% of employees) and those living in a rural zone (17% vs. 12% in metropolitan areas).

For more details, see annex tables 2b and 2c.

1.3 Proportion of tobacco users

In the following chart respondents' answers on the questions about combustible and non-combustible tobacco use are combined - as such, we are able to get a more complete picture of tobacco use across the EU Member States.

The proportion of respondents who say they smoke and/or use non-combustible tobacco products, either every day or occasionally, is the highest in Greece (42%), followed by Bulgaria (39%), Latvia (38%), Hungary, Slovakia, Romania, the Czech Republic and Lithuania (all 36%). Respondents in

Slovenia (23%), followed by those in Finland (25%), Estonia (26%), Portugal and Malta (both 27%) are the least likely to be tobacco users.

Tobacco users
Regular or occasional use of combutible and/or non-combustibale tobacco

Q1. Regarding smoking cigarettes, cigars or a pipe, which of the following applies to you?
Q2. Regarding oral tobacco such as snuff, snus or chewing tobacco, which of the following applies to you?
Base: all respondents
% by country

2. Exposure to tobacco smoke

Fourteen percent of non-smokers and 23% of smokers are exposed to other people's tobacco smoke at home on an almost daily basis.

Home exposure to environmental tobacco smoke (ETS) is the lowest in Finland and Sweden - not more than 5% of Finns and Swedes are regularly exposed to other people's tobacco smoke at home. Lithuanians, Cypriots, Greeks and Bulgarians are six times more likely to be exposed to ETS at home.

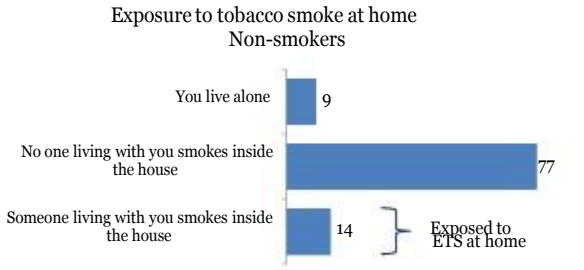
More than a third of smokers in the EU expose others to ETS at home. The proportion of smokers who expose others to tobacco smoke at home ranges from 8% in Finland to half of the smokers in Poland, Greece, Bulgaria and Denmark.

A fifth of respondents working away from the home have to do so in places where they are exposed to tobacco smoke on a daily basis - over half of them for at least one hour a day.

In Greece, six out of 10 working respondents are exposed to smoke at their workplace on a daily basis. Nine out of 10 working respondents in Sweden, the UK and Finland are never, or hardly ever, exposed to tobacco smoke at work.

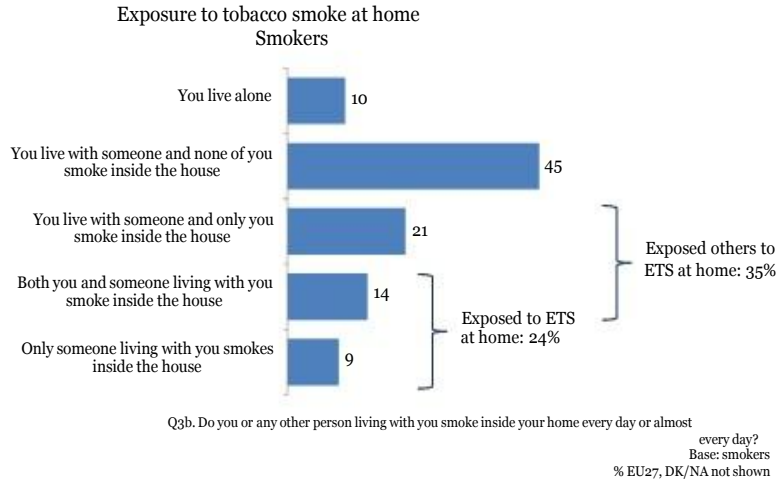
2.1 Second-hand smoke exposure at home

Fourteen percent of non-smokers in the EU are exposed to other people's tobacco smoke at home - i.e. environmental tobacco smoke (ETS, also called second-hand smoke or passive smoke) at home every day or almost every day.



Among the respondents who smoke, almost a quarter are exposed to second-hand smoke at home: 14% answer that they, and someone living with them, smoke daily or almost daily inside the house, while 9% say it is only someone living with them who smokes inside the house.

More than a third of smokers expose others to ETS at home: 21% say that only they smoke daily or almost daily inside their home and 14% answer that they, and someone living with them, smoke inside the house.



Country variations

Exposed to ETS at home

Home exposure to ETS is the lowest in Finland and Sweden - not more than 5% of Finns and Swedes are exposed to other people's tobacco smoke at home on an everyday basis. Other countries at the lower end of the scale are Luxembourg, France and the UK - with approximately one in 10 respondents exposed to ETS at home. In Lithuania, Cyprus, Greece and Bulgaria, however, respondents are six times as likely to be exposed to ETS at home (29%-30%).

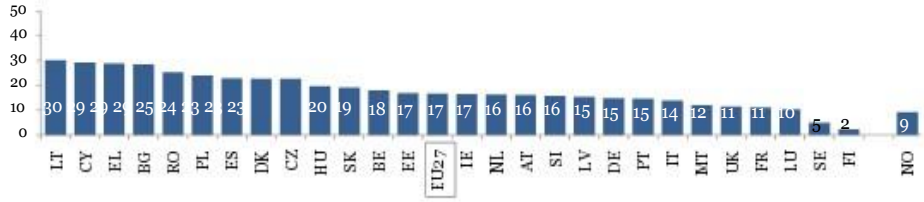
Similar to the results for all respondents, exposure of non-smokers to ETS at home is the highest in Cyprus (31%), Lithuania and Greece (both 28%) and the lowest in Finland (2%) and Sweden (3%), followed by the UK, Luxembourg and France (7%-9%).

Exposure for smokers, on the other hand, is the highest in Bulgaria (38%), followed by Denmark, the Czech Republic, Lithuania and Hungary (33%-35%). Finland, Sweden, France and Luxembourg are found - once again - at the lower end of the distribution.

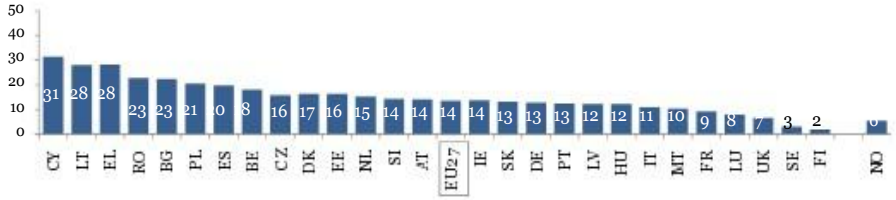
In all Member States, smokers are more often exposed to other people's smoke at home than non-smokers - the exception being Finland; only a very few Finnish smokers are exposed to other's people smoke at home (3%).

Proportion of non-smokers and smokers exposed to ETS at home

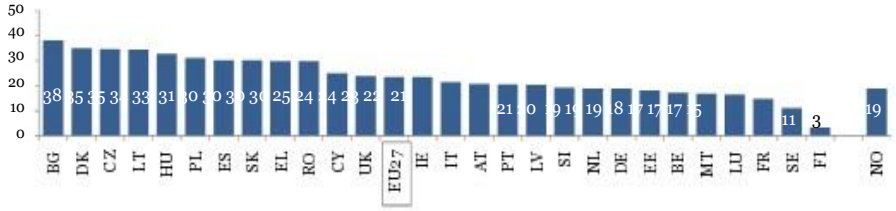
All respondents



Non-smokers



Smokers

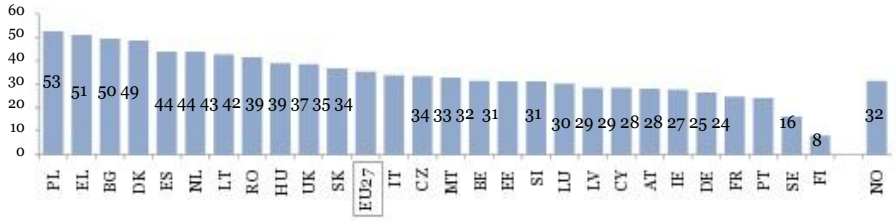


Q3a. Does any person living with you smoke inside your home every day or almost every day?
Q3b. Do you or any other person living with you smoke inside your home every day or almost every day?
Base: non-smokers/smokers
% by country

Exposing others to ETS at home

The proportion of smokers who expose others to tobacco smoke at home ranges from 8% in Finland and 16% in Sweden to half of the smokers in Poland (53%), Greece (51%), Bulgaria (50%) and Denmark (49%).

Proportion of smokers exposing others to ETS at home



Q3b. Do you or any other person living with you smoke inside your home every day or almost every day?
Base: smokers
% by country

Socio-demographic considerations

Of the non-smoking respondents, the 15-24 year-olds and the manual workers are the most likely to be exposed to second-hand smoke at home (27% and 17%, respectively, vs. 14% average). The other socio-demographic variables show almost no differences in exposure of non-smokers to ETS at home.

Looking at the results for the smokers, it appears that women, those aged between 15 and 39, manual workers and non-working respondents have a higher chance of being exposed to ETS at home. For example, while one-fifth of the oldest smokers (over 54) are exposed to other people's smoke at home, this proportion increases to almost three out of 10 for the 15-39 year-old smokers (27%-28%). Similarly, while 22% of the self-employed smokers are exposed to second-hand smoke at home, this proportion is 29% for the manual workers and 26% for those not working.

Manual workers and non-working respondents who smoke are also more likely to expose others to ETS at home, as are female smokers, those aged between 25 and 39, the less-educated smokers and those living in urban areas. For example, approximately four out of 10 female smokers (38%) and those smokers with the lowest level of education (41%) expose others to tobacco smoke at home compared to 33% of men and 30% of the smokers with the highest level of education.

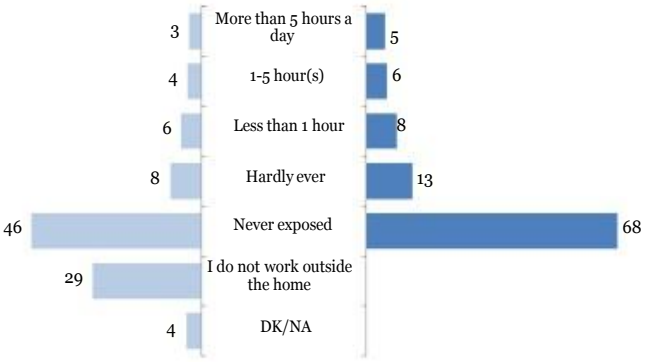
For more details, see annex tables 3b and 4b.

2.2 Exposure to tobacco smoke at the workplace

Exposure to other people's smoke not only occurs at home, but can also occur at the workplace. Focusing solely on the respondents working away from the home (right-hand side of the chart)[7], it is noted that one-fifth of respondents are exposed to tobacco smoke at their workplace on a daily basis: 5% are exposed for more than five hours a day, 6% for between one and five hours a day and 8% for less than one hour a day.

Eight out of 10 respondents who work away from the home are hardly ever or never exposed to tobacco smoke at work (68% "never" and 13% "hardly ever").

Amount of exposure to tobacco smoke at the workplace



Q4. At your workplace, how many hours are you exposed to tobacco smoke, on a daily basis?
Base: all respondents (left-hand side of the chart)/respondents working away from the home (right-hand side of the chart)
% EU27

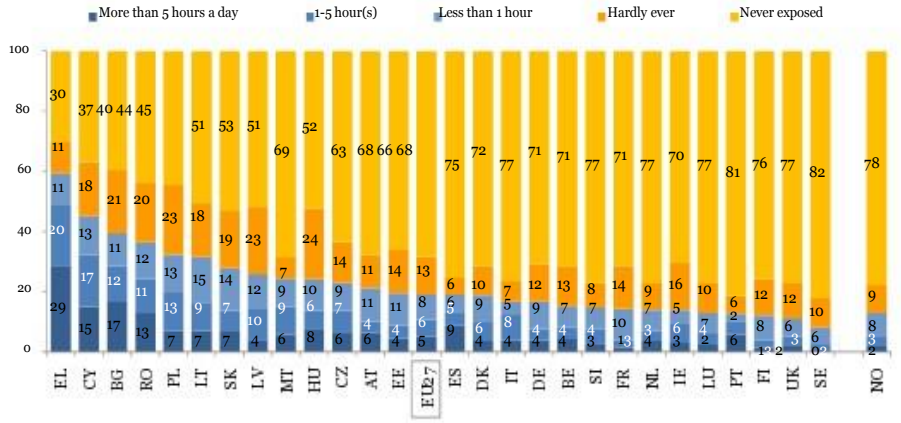
Country variations

Looking only at those respondents who work away from the home, it is noted that six out of 10 of these respondents in Greece are exposed to smoke at their workplace on a daily basis. In Cyprus, Bulgaria and Romania, more than one-third of the respondents are exposed to smoke at their workplace on a daily basis (between 37% and 45%).

Furthermore, 29% of Greek respondents working away from the home are exposed to more than five hours of smoke on a daily basis. This proportion is also significantly higher than the EU average of 5% in Bulgaria (17%), Cyprus (15%) and Romania (13%).

In sharp contrast, approximately nine out of 10 respondents working away from the home in Sweden (92%), the UK (89%) and Finland (88%) are never, or hardly ever, exposed to tobacco smoke at work.

Amount of exposure to tobacco smoke at the workplace



Q4. At your workplace, how many hours are you exposed to tobacco smoke, on a daily basis?
Base: respondents working away from the home
% by country

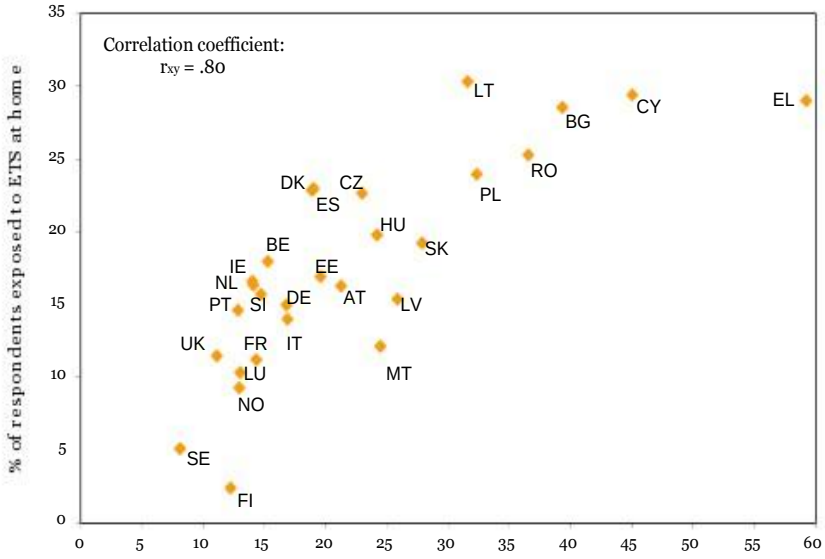
Looking at both the results for second-hand smoke at home and exposure to tobacco smoke at the workplace, similarities can be seen: each time, the same countries appear at the higher and lower ends of the distributions. For example:

- In Greece, Cyprus and Bulgaria, respondents are among the most likely to be exposed to other people's tobacco smoke at home on an everyday basis (all 29%). Working respondents in these countries are also the most likely to be exposed to smoke at their workplace on a daily basis (60%, 45% and 39%, respectively).

- Home exposure to ETS is the lowest in Finland and Sweden (2% and 5%, respectively), and working respondents in Sweden and Finland are also among least likely to be exposed to tobacco smoke at their workplace (8% and 11%, respectively).

The correlation coefficient for the relationship between a) the proportion of respondents exposed to second-hand smoke at home and b) the proportion of respondents exposed to tobacco smoke at work (among respondents who work away from the home) is .80 - this number signifies a strong correlation between the two variables at the country level.

Correlation between second-hand smoke exposure at home and exposure to tobacco smoke at work - country level

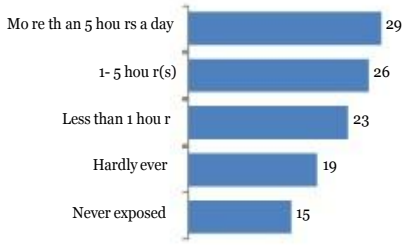


Exposure to ETS at home and the amount of exposure to tobacco smoke at the workplace

The chart on the right-hand side shows that the likelihood to be exposed to other people's tobacco smoke at home increases with the amount of exposure to tobacco smoke at the workplace. Among the working respondents who are never exposed to tobacco smoke at the workplace, only 15% are exposed to second-hand smoke at home. Twice as many (29%) respondents - who are exposed to tobacco smoke at work for more than five hours a day - are (also) exposed to other people's tobacco smoke at home on an everyday basis.

Proportion of respondents working away from the home who are exposed to ETS at home

by amount of exposure to tobacco smoke at work



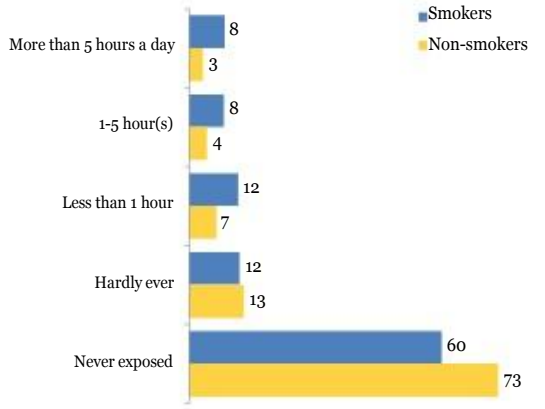
Q3a. Does any person living with you smoke inside your home every day or almost every day? Q3b. Do you or any other person living with you smoke inside your home every day or almost every day?
Base: respondents working away from the home; % EU27

Results by respondents' characteristics

Smokers are also more likely to be exposed to smoke at their workplace than non-smoking respondents: 86% of the non-smoking respondents (working away from the home) are never or hardly ever exposed to smoke compared to 72% of the respondents who smoke.

More than one-tenth (14%) of non-smokers have to work in places where they are exposed to other people's smoke on a daily basis - half of them (7%) for at least one hour a day. The proportion of smokers (working away from the home) who are exposed to smoke at their workplace on a daily basis is, nevertheless, twice as large (28%).

Amount of exposure to tobacco smoke at the workplace



Q4. At your workplace, how many hours are you exposed to tobacco smoke, on a daily basis?
Base: respondents working away from the home
% EU27

Men, the 15-24 year-olds, those still studying and the manual workers (working away from the home) are more likely to be exposed to smoke at their workplace. For example, only two-thirds (68%) of manual workers are never, or hardly ever, exposed to smoke at their workplace, compared to eight out of 10 (81%) self-employed respondents. Manual workers are more likely to say that they are exposed to smoke for between one and five hours a day (10% vs. 5% of the self-employed) or for less than one hour a day (13% vs. 6%). The proportions of manual workers and self-employed respondents who are exposed to smoke for more than five hours a day, however, are the same (both 9%).

For more details, see annex tables 5b and 5c.

3. Smoking restrictions at work

Seventeen percent of EU citizens - who work at an indoor facility - say there are no restrictions, or only very weak restrictions on smoking in their workplace.

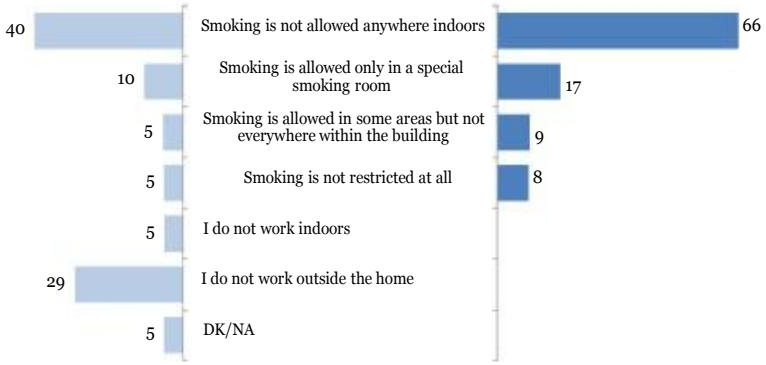
More than six out of 10 Greek respondents (62%) report no or only weak restrictions on smoking in their workplace, followed by 47% of Bulgarians and 41% of Lithuanians and Cypriots. In Sweden, France and the UK, less than one-tenth of interviewees say that this is the case at their workplace.

Working in an area where smoking is not restricted is more likely to occur for men, the over 54s, those with the lowest levels of education, the self-employed and manual workers.

The right-hand side of the following chart shows that almost a fifth of EU citizens - who work at an indoor facility[8] - say there are no restrictions, or only weak restrictions on smoking in their workplace: 8% say that smoking is not restricted at all at their workplace and 9% answer that it is allowed in some areas but not everywhere in the building.

Two-thirds of interviewees report a total restriction on smoking in their workplace (i.e. they answer that smoking is not allowed anywhere indoors) and 17% say that smoking is allowed in a special smoking room.

Smoking restrictions at work



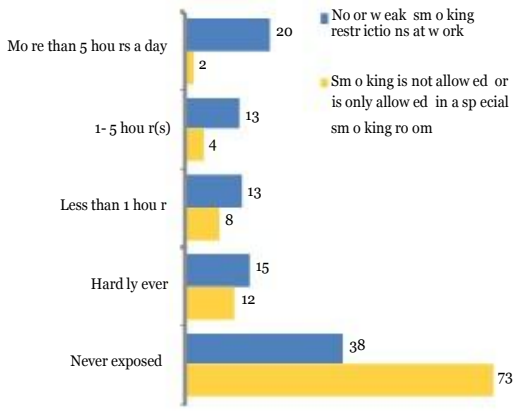
Q5. What best describes the smoking restrictions at your place of work?
Base: all respondents (left-hand side of the chart)/respondents working in an indoor facility (right-hand side of the chart)
% EU27

[8] In this section, we focus solely on the respondents who say they work in an indoor facility - as such, we are able to get a more complete picture of the differences in workplace restrictions across the EU Member States.

Smoking restrictions at work and the amount of exposure to tobacco smoke at the workplace

The chart on the right-hand side shows that almost half of the respondents who say there are no restrictions, or only weak restrictions on smoking in their workplace are exposed to tobacco smoke at work on a daily basis (20% are exposed for more than five hours a day, 13% for between one and five hours a day and 13% for less than one hour a day). The corresponding proportion for respondents who work in a location where smoking is completely restricted, or where smoking is only allowed in a special smoking room is three times lower (14% vs. 46%).

Amount of exposure to tobacco smoke at work



Q4. At your workplace, how many hours are you exposed to tobacco smoke, on a daily basis?
Base: respondents working away from the home
% EU27

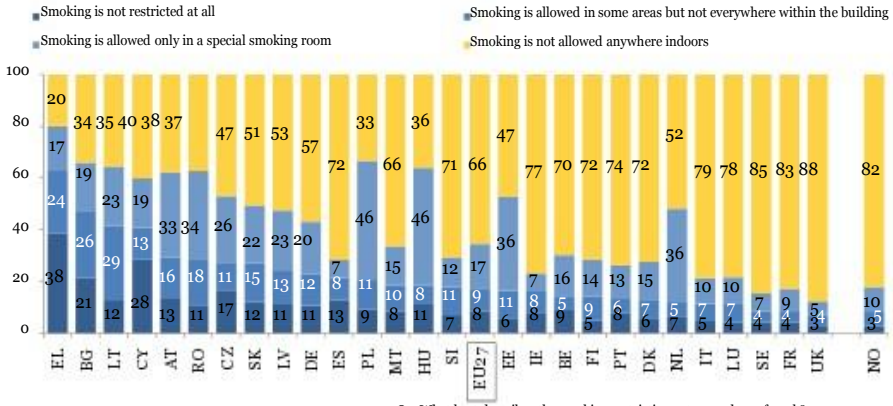
Country variations

There is a large variation, across the EU Member States, in workplace smoking restrictions. More than six out of 10 (63%) of Greek respondents - working in an indoor facility - say there are no restrictions, or only very weak restrictions on smoking in their workplace; followed by 47% of Bulgarians and 41% of Lithuanians and Cypriots. In Sweden, France and the UK, on the other hand, less than one-tenth of interviewees say that this is the case at their workplace.

Furthermore, 38% of Greek respondents say that smoking is not restricted at all in their workplace, followed by 28% of Cypriots and 21% of Bulgarians. In sharp contrast, less than 5% of British, Swedish, French and Luxembourgish respondents answer that smoking is not restricted at all.

More than eight out of 10 British, Swedish and French respondents answer that smoking is not allowed anywhere indoors at their workplace. Respondents in Greece are more than four times less likely to report a total restriction of smoking in their workplace (88% in the UK, 85% in Sweden and 83% in France vs. 20% in Greece).

Smoking restrictions at work



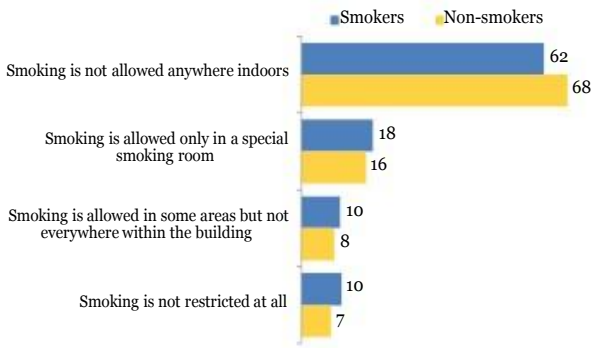
Q5. What best describes the smoking restrictions at your place of work?
Base: respondents working in an indoor facility
% by country

Results by respondents' characteristics

One-fifth of smokers - working in an indoor facility - say there are no restrictions, or only very weak restrictions on smoking at their workplace; the corresponding proportion for non-smokers is 15%.

A slightly higher proportion of non-smokers say they work in a location that restricts smoking completely (i.e. smoking is not allowed anywhere indoors - 68% vs. 62% of smokers).

Smoking restrictions at work



Q5. What best describes the smoking restrictions at your place of work?
Base: respondents working in an indoor facility
% EU27

A similar small difference is found, for example, when comparing men with women (62% vs. 70%) or the 15-24 year-olds and the over 54s with the 25-54 year-olds (64% vs. 66%-67%). A significantly larger difference is found when comparing respondents across occupational groups: only half of the manual workers say they work in a location that restricts smoking completely compared to 63% of the self-employed and 71% of the employees.

Working in a place where smoking is not restricted at all is more likely to occur for men (11% vs. 6% of women), the oldest respondents (12% vs. 7%-9% in the other age groups), those with the lowest levels of education (14% vs. 6% in the highest educational category), the self-employed and manual workers (15%-16% vs. 5% of employees).

For more details, see annex tables 6b and 6c.

4. Attitudes towards smoke-free regulations

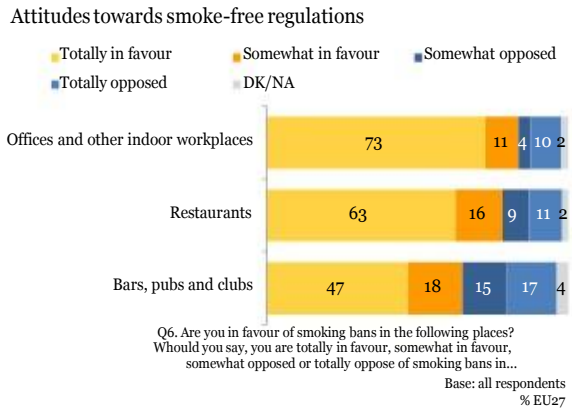
A majority of EU citizens support smoke-free public places, such as offices, restaurants and bars. Support for workplace smoking restrictions is slightly higher than support for such restrictions in restaurants (84% vs. 79%). Two-thirds support smoke-free bars, pubs and clubs.

Support for smoking restrictions in public places is the highest in Italy and Sweden, while the Czechs, Austrians and Dutch are each time found to be among the least supportive of such restrictions.

Smoke-free public places, such as offices, restaurants and bars, receive more support among non-smokers than among smokers. Half of the smokers are in favour of smoking restrictions in bars compared to seven out of 10 non-smoking respondents.

Almost three-quarters (73%) of the participating EU citizens are totally in favour of smoking restrictions in offices and other indoor work places and 11% are somewhat in favour of such restrictions. Only one-tenth of the respondents strongly oppose workplace smoking restrictions.

A large majority of the interviewees are also in favour of smoke-free restaurants (63% are totally in favour and 16% somewhat in favour), but they are less likely to support smoke-free bars, pubs and clubs (47% "totally in favour" and 18% "somewhat in favour"). One-fifth of the respondents do not support smoking restrictions in restaurants and one-third are against smoking restrictions in bars, pubs and clubs.

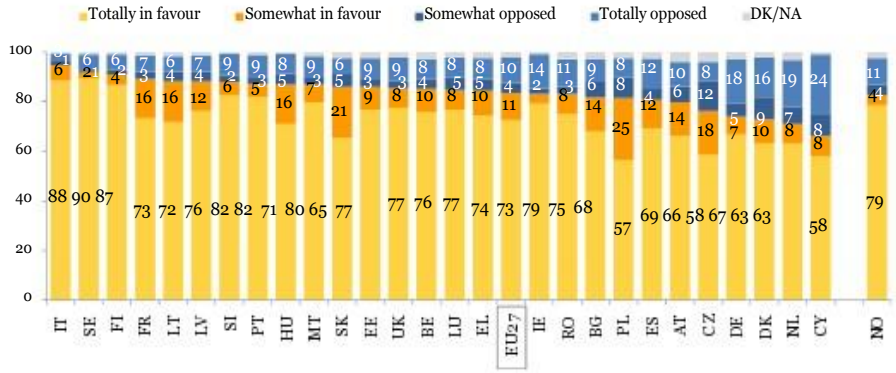


Country variations

Over two-thirds of interviewees in all EU Member States and Norway favour smoking restrictions in offices and other indoor work places; ranging from approximately seven out of 10 respondents in Cyprus (66%), the Netherlands (71%) and Denmark (73%) to more than nine out of 10 in Italy (95%), Sweden (92%) and Finland (91%).

In Italy, Sweden and Finland, approximately nine out of 10 respondents (87%-90%) are totally in favour of smoking restrictions in offices and other indoor work places. In Cyprus, the Czech Republic and Poland, on the other hand, slightly less than six out of 10 interviewees (57%-58%) share this opinion. However, while a quarter of the Cypriots are totally opposed to smoke-free offices and other indoor work places, less than one-tenth (8%) of the Czech and Polish interviewees hold that view.

Attitudes towards smoking restrictions in offices and other indoor work places



Q6. Are you in favour of smoking bans in the following places? Whould you say, you are totally in favour, somewhat in favour, somewhat opposed or totally oppose of smoking bans in...

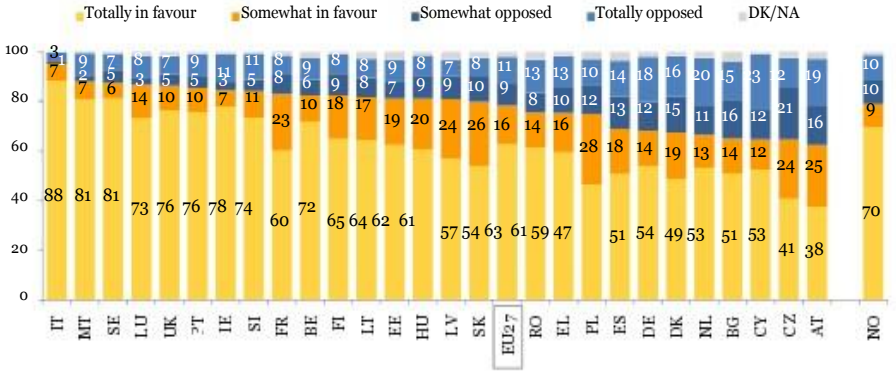
Base: all respondents
% by country

A majority of citizens in all Member States also support smoking restrictions in restaurants - ranging from 62% in Austria to 95% in Italy.

The Italians, followed by the Maltese and Swedes, are the most likely to favour regulating smoking in restaurants. Almost nine out of 10 Italian respondents (88%) and eight out of 10 Maltese and Swedish respondents (both 81%) select the "totally in favour" response. In sharp contrast, only half as many Austrians and Czechs give this response (38% and 41%, respectively).

In a majority of the countries, support for smoke-free restaurants is slightly lower than support for smoke-free offices and other indoor work places. The most notable exceptions are Austria, Bulgaria, Spain and the Czech Republic - in these countries, the difference in support for each type of smoking restriction is larger. For example, 80% of Austrians are in favour of smoke-free offices but only 62% support smoke-free restaurants (a difference of 18 percentage points).

Attitudes towards smoking restrictions in restaurants



Q6. Are you in favour of smoking bans in the following places? Whould you say, you are totally in favour, somewhat in favour, somewhat opposed or totally oppose of smoking bans in...

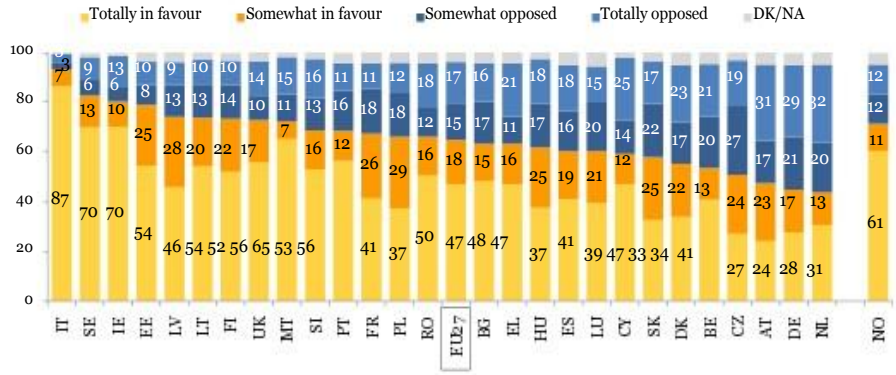
Base: all respondents
% by country

Similar to smoking restrictions in offices and restaurants, citizens in Italy are the most prone to accept smoking restrictions in bars, pubs and clubs (93% - 87% "totally in favour"). Sweden and Ireland join Italy at the higher end of the scale with approximately eight out of 10 respondents supporting smoke-free bars, pubs and clubs (70% in both countries is totally in favour). In three Member States

support for smoking restrictions drops below 50%: Austria (47%), Germany (45%) and the Netherlands (44%).

In all countries - except in Italy - smoking restrictions in bars, pubs and clubs are significantly less accepted than smoking restrictions in offices or in restaurants. For example, 85% of Belgians are in favour of regulating smoking in offices and 82% in restaurants, however, only 54% also agree with regulating smoking in pubs, bars and clubs.

Attitudes towards smoking restrictions in bars, pubs and clubs

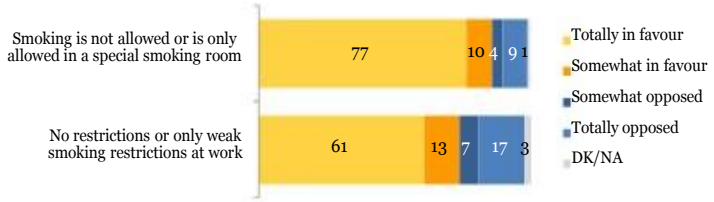


Q6. Are you in favour of smoking bans in the following places? Whould you say, you are totally in favour, somewhat in favour, somewhat opposed or totally oppose of smoking bans in...
Base: all respondents
% by country

Results by respondents' characteristics

Smoke-free public offices receive more support among interviewees who work at an indoor facility with strict smoking restrictions (i.e. smoking is not allowed anywhere indoors or it is only allowed in a special smoking room) - 86% of these respondents are in favour of smoking restrictions in offices and other indoor work places compared to 74% of respondents who say there are no restrictions, or only very weak restrictions on smoking in their workplace.

Attitudes towards smoking restrictions in offices and other indoor work places



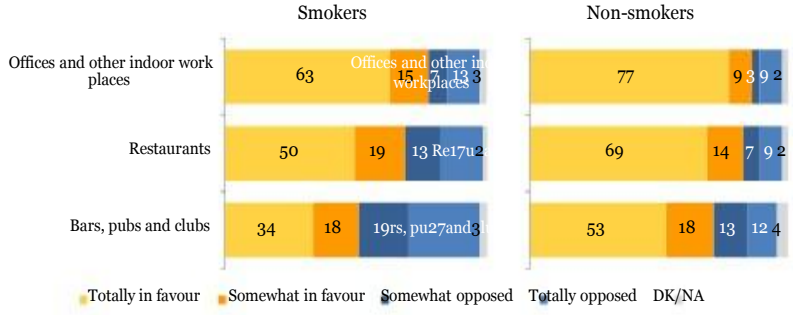
Q6. Are you in favour of smoking bans in the following places? Whould you say, you are totally in favour, somewhat in favour, somewhat opposed or totally oppose of smoking bans in...
Base: respondents working away from the home
% EU27

Smoke-free public places, such as offices, restaurants and bars, also receive more support among non-smokers than among smokers:

- Eight out of 10 smokers (78%) are in favour of smoking restrictions in offices and other indoor work places compared to more than eight out of 10 non-smokers (86%).
- More than eight out of 10 non-smokers also support smoking restrictions in restaurants, while only seven out of 10 smokers accept such restrictions (83% vs. 68%). Furthermore, seven out

- Finally, half of the smokers (51%) are in favour of restricting smoking in bars, pubs and clubs and a quarter (27%) are totally against such restrictions; the corresponding proportions for respondents who do not smoke are 71% and 12%.

Attitudes towards smoke-free regulations



Q6. Are you in favour of smoking bans in the following places? Whould you say, you are totally in favour, somewhat in favour, somewhat opposed or totally oppose of smoking bans in...
Base: all respondents
% EU27

At least eight out of 10 respondents across all socio-demographic groups support smoking restrictions in offices and other indoor work places - ranging from 80% of the self-employed to 88% of those still in education. Women, the most-educated respondents, those living in urban areas and employees are slightly more likely than their counterparts to select the "totally in favour" response. For example, while three-quarters of employees are totally in favour of smoking restrictions in offices and other indoor work places, only two-thirds of the manual workers agree with them.

The socio-demographic analysis for support for smoking restrictions in restaurants and bars, pubs or clubs shows that men, older respondents, those in the middle educational category, respondents living in metropolitan areas, manual workers and the self-employed appear to be less likely to accept smoking restrictions in such public places. For example:

- Three-quarters of the self-employed and manual workers are in favour of smoking restrictions in restaurants compared to eight out of 10 employees and non-working respondents. Furthermore, 15% of the self-employed respondents and 13% of manual workers say they are totally opposed to such restrictions compared to one-tenth of the latter.

- Half of the over 54 year-olds (51%) are totally in favour of smoking restrictions in bars, pubs and clubs and only 14% are totally against such restrictions. The corresponding proportions for the 15-24 year-olds are 44% and 18%.

For more details, see annex tables 7b, 8b and 9b.

5. Perceived effectiveness of health warnings

Three out of 10 EU citizens think that health warnings on tobacco packs are effective in informing them about the health effects of tobacco.

Three out of 10 non-smokers perceive health warnings as being effective in preventing them from smoking and a fifth of smokers think the warnings are effective in persuading them to smoke less or to quit.

Respondents in Romania, Ireland, the UK and Lithuania perceive health messages as being more effective than their counterparts in the other Member States.

Younger respondents, the less-educated respondents and manual workers across all groups - those who have never smoked, former smokers and current smokers - appear to be slightly more likely to perceive health warnings on tobacco packs as being effective.

Adding a colour picture to a text-only health warning is perceived as being effective by more than half of EU citizens: 20% say this would be very effective and 35% think it is somewhat effective.

5.1 The effectiveness of health warnings on tobacco packs

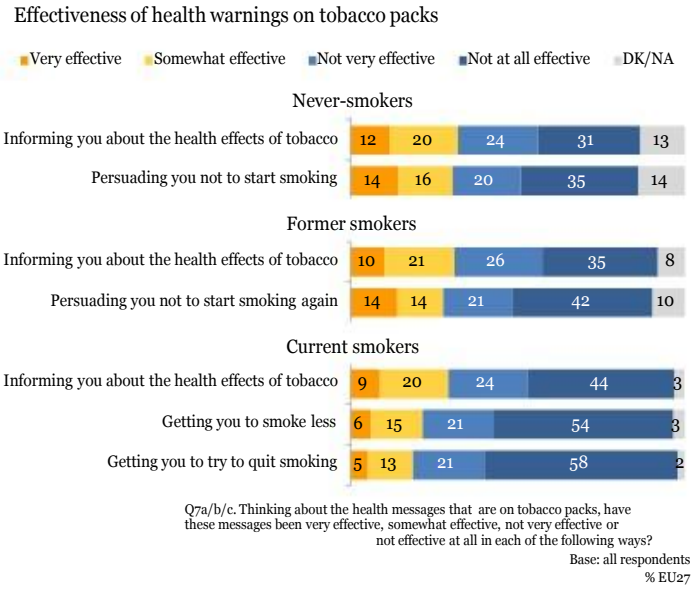
Those respondents who have never smoked, and both former and current smokers are asked to evaluate the effectiveness of such health warnings on tobacco packs in terms of: a) informing them about the health hazards of tobacco and b) keeping them from smoking.

Note: The Tobacco Products Directive (2001/37/EC) introduced new health messages to be put on tobacco products and dramatically increased the size of the warnings. The Directive set out two general warnings - “Smoking kills” and “Smoking seriously harms you and others around you” - and 14 additional warnings, to be placed on the front and back of each pack.

Overall, three out of 10 (31%) EU citizens think that health warnings on tobacco packs are effective in informing them about the hazards and effects of smoking. Warnings are perceived as similarly effective in preventing respondents from smoking (in the view of never-smokers and former smokers - 30%) and somewhat less effective in persuading people to smoke less or to quit (in the opinion of smokers - 22% and 19%, respectively).

One-third of those who have never smoked (32%) think that health warnings on tobacco packs are effective in informing them about the health effects of tobacco. A similar proportion (31%) say that health messages are effective in persuading them not to start smoking. Similarly, three out of 10 former smokers (31%) answer that health messages are effective for the former purpose and 28% say the same for the latter.

Although a similar proportion of smokers say that such warnings are effective in informing them about the health hazards and effects of smoking (29%), they are less likely to perceive them as being effective in persuading them to smoke less or to try to quit smoking (22% and 19%, respectively).



Country variations

Non-smokers (those who have never smoked and former smokers)

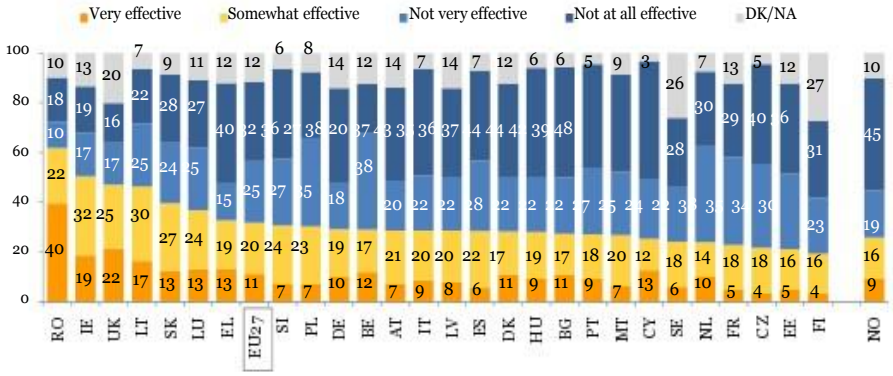
More than six out of 10 (62%) Romanian respondents, and approximately half of the Irish, British and Lithuanian respondents (46%-51%), who have never smoked or who have quite smoking, answer that health warnings on tobacco packs are effective in informing them about the health effects of tobacco. In Romania, four out of 10 respondents say that warnings are very effective for this purpose; in Ireland, the UK and Lithuania, the respondents are twice less likely to share this opinion (19%, 22% and 17%, respectively).

In comparison with non-smokers in Romania, the Finns, Estonians, Czechs and French are almost three times less likely to perceive health messages as being effective in informing them about the health hazards and effects of tobacco (between 19% and 23%). Furthermore, in the latter list of countries not more than 5% of non-smokers think the health messages are very effective for this purpose.

Similar to the results for the effectiveness of informing people about the health effects of smoking, a majority of non-smokers in Romania think that health warnings are effective in preventing them from starting to smoke: 46% say they are very effective and 15% somewhat effective. In all of the other Member States, however, less than half of non-smokers perceive health messages as being effective for this purpose. The proportion of respondents who perceive the messages as being effective ranges from slightly less than one-fifth in Estonia (18%), the Czech Republic, Finland and Austria (all 19%) to more than four out of 10 respondents in the UK (42%), Ireland (43%), Slovakia (46%) and Lithuania (47%).

Focusing on the likelihood of choosing the other extreme answering category - not at all effective - it is noted that more than four out of 10 Cypriot, Bulgarian, Hungarian, Italian, Portuguese and Norwegian non-smokers think that health messages are not at all effective in informing them about the health impacts and effects of smoking and more than half of the Norwegians and Cypriots say they are not at all effective in preventing them from starting to smoke.

Never-smokers and former smokers - Effectiveness of health warnings on tobacco packs: Informing you about the health effects of tobacco

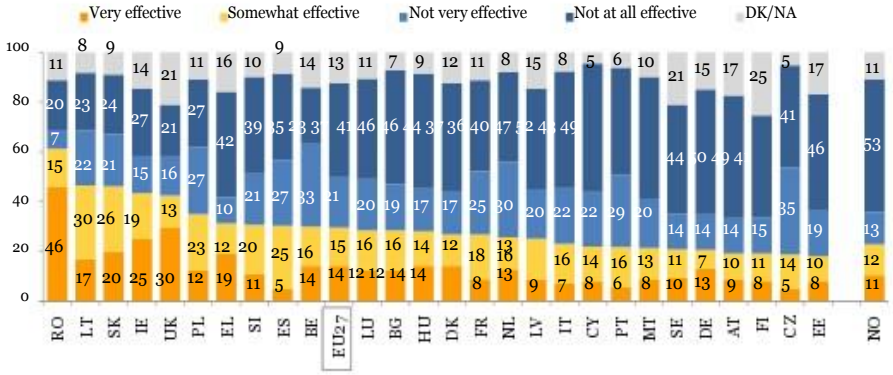


Q7a. Thinking about the health messages that are on tobacco packs, have these messages been very effective, somewhat effective, not very effective or not effective at all in each of the following ways?

Base: never-smokers and former smokers

% by country

Never-smokers and former smokers - Effectiveness of health warnings on tobacco packs: Persuading you not to start smoking (again)



Q7a. Thinking about the health messages that are on tobacco packs, have these messages been very effective, somewhat effective, not very effective or not effective at all in each of the following ways?

Base: never-smokers

% by country

Current smokers

The results for current smokers - once again - show that respondents in Romania, Ireland, the UK and Lithuania perceive health messages as being more effective than their counterparts in other Member States do. Smokers in Slovakia, on the other hand, are found at the bottom of the distribution.

- Between 32% and 56% of the current smokers in Lithuania, the UK, Ireland and Romania say that health messages are effective in informing them about the health effects of tobacco. In Romania, three out of 10 smokers think that the messages are very effective for this purpose. In Slovakia, only 14% of smokers say that such health messages are informative.

- Four out of 10 Romanian smokers and three out of 10 Lithuanian, Irish and British smokers agree that health warnings are effective in getting them to smoke less. More than one-tenth (between 12% and 17%) of the smokers in Romania, Ireland and the UK say that health warnings are very effective for this purpose. In Slovakia, only 13% think that health warnings help in getting them to smoke less.

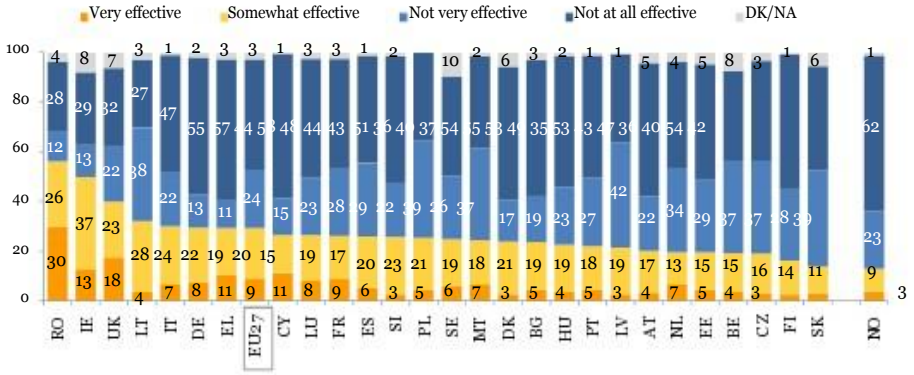
- Finally, slightly more than one-third of Romanian smokers and a quarter of those in Lithuania, the UK and Ireland think that health messages influence them to try to quit smoking. One-sixth of the smokers in Romania think the messages are very effective for this purpose - in Slovakia, on the other hand, only half as many smokers say that health messages are very or somewhat effective (8%).

Similar to the results obtained for the EU overall, smokers in all Member States perceive health messages as being less effective in influencing their actual smoking behaviour. Furthermore, not much variation is observed across most countries in smokers' perceptions of the effectiveness of health warnings to get them to smoke less (between 11% and 24% in 20 countries) and to persuade them to try to quit smoking (between 10% and 20% in 20 countries). Some countries, nevertheless, stand out from the pack with a higher proportion of smokers choosing the "not at all effective" response:

- More than seven out of 10 Austrian (77%), Finnish (74%), German (72%) and Norwegian (73%) smokers say that health warnings are not at all effective in convincing them to smoke less (vs. EU average of 54%).

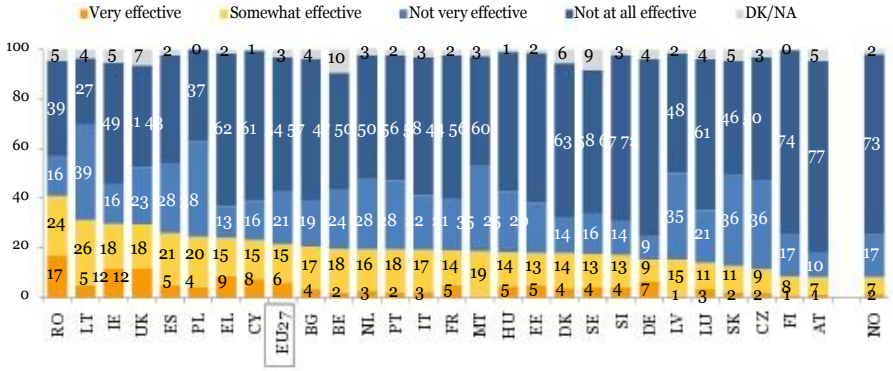
- Similarly, at least three-quarters of the smokers in Austria (77%), Germany (75%), Finland and Norway (both 74%) perceive health warnings as not being at all helpful in getting people to try to quit smoking (vs. EU average of 58%).

Current smokers - Effectiveness of health warnings on tobacco packs:
Informing you about the health effects of tobacco



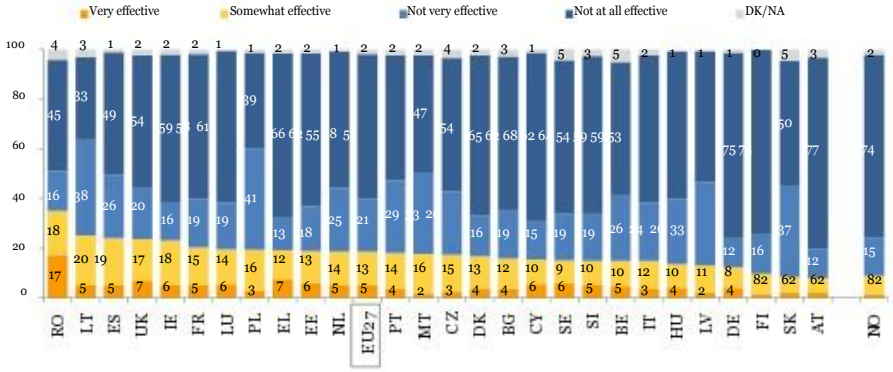
Q7c. Thinking about the health messages that are on tobacco packs, have these messages been very effective, somewhat effective, not very effective or not effective at all?
Base: smokers
% by country

Current smokers - Effectiveness of health warnings on tobacco packs:
Getting you to smoke less



Q7c. Thinking about the health messages that are on tobacco packs, have these messages been very effective, somewhat effective, not very effective or not effective at all?
Base: smokers
% by country

Current smokers - Effectiveness of health warnings on tobacco packs:
Getting you to try to quit smoking



Q7c. Thinking about the health messages that are on tobacco packs, have these messages been very effective, somewhat effective, not very effective or not effective at all?
Base: smokers
% by country

Socio-demographic considerations

Younger respondents, the less-educated respondents and manual workers across all groups - i.e. those who have never smoked, former smokers and current smokers - appear to be slightly more likely to perceive health warnings on tobacco packs as being effective.

Among the 15-24 year-olds, 41% of those who have never smoked, 39% of former smokers and 29% of current smokers think that health messages effectively inform them about the health effects of tobacco. The corresponding proportions for the over 54 year-olds are, respectively, 28%, 28% and 25%.

Four out of 10 of the 15-24 year-old respondents who have never smoked and 36% of the former smokers in this age category say that health warnings help them not to start smoking (again). Only slightly more than a quarter of the over 54 year-olds share this opinion (27% and 26%, respectively). The 15-24 year-old smokers, however, are less likely than their older counterparts to perceive health warnings as being a support to smoke less or to quit smoking.

A least one-third of the manual workers - those who have never smoked (35%), former smokers

them about the health effects of tobacco. In all other occupational groups, not more than a third of those who have never smoked, the former and current smokers share this opinion.

One-third of manual workers who have never smoked and three out of 10 who have quit smoking say that health messages persuade them not to start smoking (again), compared to only, respectively, 29% and 23% of the self-employed respondents who have never smoked and the former smokers. Similarly, approximately a quarter of the manual workers who smoke say that health messages are effective in persuading them to smoke less (25%) or to quit altogether (23%); the corresponding proportions for the self-employed are, respectively, 19% and 12%.

Approximately one-third of the former smokers (34%) and current smokers (32%) with the lowest level of educational attainment perceive health warnings as informative, compared to approximately three out of 10 former smokers (31%) and current smokers (28%) in the highest educational category. One-third of the least-educated former smokers also think these messages help them not to start smoking again (32% vs. 24% in the highest educational category) and almost a quarter of the least-educated smokers say that they help them to smoke less (23% vs. 18% in the highest educational category). No significant differences are found when comparing the perceptions of those who have never smoked across educational groups.

For more details, see annex tables 10b through 16b.

5.2 The effectiveness of pictorial health warnings

The EU is also promoting the use of pictorial warnings on tobacco packs and has established a library of 42 different images conveying messages on the effects of tobacco on people's health. These pictorial warnings are starting to appear in Member States: Belgium introduced them in November 2006, Romania followed in July 2008 and the UK in October 2008.

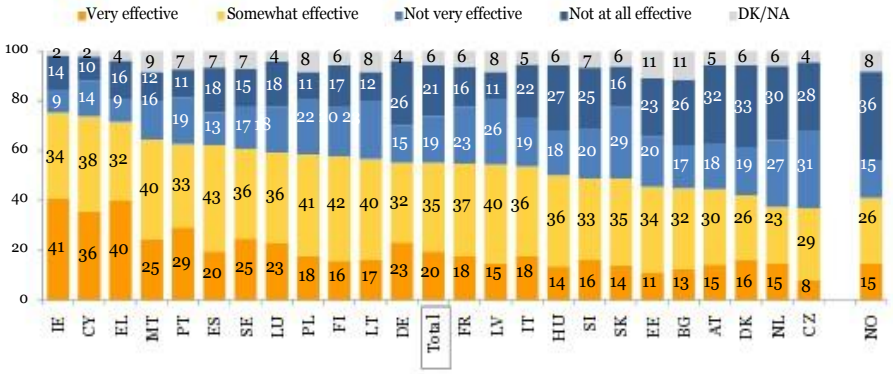
Adding a colour picture, illustrating the health effects of smoking, to a written health warning is perceived as being effective by a slight majority of EU citizens: 20% say this would be very effective and 35% think that it would be somewhat effective. The corresponding proportions for Norway are 15% and 26%, respectively.

Comparing respondents' answers on the question about the effectiveness of (text-only) health warnings in informing them about the health hazards of smoking and the one about the perceived effectiveness of pictorial health warnings, it is noted that:

- One-third of interviewees did not distinguish between the two types of health warnings in terms of their effectiveness (e.g. they select for both questions the "somewhat effective" response).
- More than four out of 10 (44%) interviewees perceive pictorial health warnings as more effective than text-only health warnings.
- Only 11% of respondents think that text-only health warnings are more effective than the pictorial health warnings, illustrating the health effects of smoking[9].

[9] One-tenth of respondents gave a "don't know" response on the question about effectiveness of text-only health messages and/or pictorial warnings.

Effectiveness of pictorial health warnings on tobacco packs



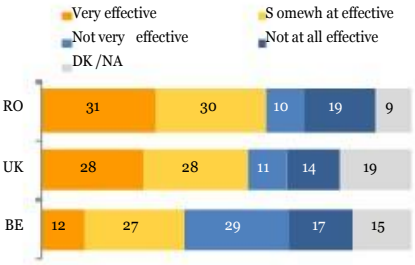
Q8a. In your opinion, how effective would adding a colour picture illustrating the health effects of smoking be in strengthening the text-only health warning?
Base: all respondents in all countries with the exception of BE, RO and UK
% by country

In all EU Member States, and Norway, pictorial health warnings are thought to be more effective than text-only warnings. The proportion of respondents who think that adding such pictorial messages would be effective ranges from slightly less than four out of 10 respondents in the Czech Republic (37%) and the Netherlands (38%) to three-quarters in Ireland (75%) and Cyprus (74%). Similarly, the proportion selecting the "very effective" response ranges from slightly less than one in 10 in the Czech Republic (8%) to four in 10 in Ireland (41%) and Greece (40%).

Belgium, Romania and the UK

We noted in the previous section that Romanian and British respondents are among the most positive about the effectiveness of health warnings on tobacco packs. One element that can help explain the more positive attitude towards health warnings in these countries is that respondents did not only think about the text-only warnings but also about the pictorial warnings when judging the effectiveness of health warnings on tobacco packs. As mentioned above, both countries introduced these pictorial warnings during 2008. When asked specifically about the effectiveness of pictorial health warnings on tobacco packs, 61% of Romanian and 56% of British respondents say that such warnings are effective when added to a text-only warning.

Attitudes towards pictorial health warnings on tobacco packs



Q8b. In your opinion, how effective has adding a colour picture illustrating the health effects of smoking been in strengthening the text-only health warning?
Base: all respondents in BE, RO and UK
% by country

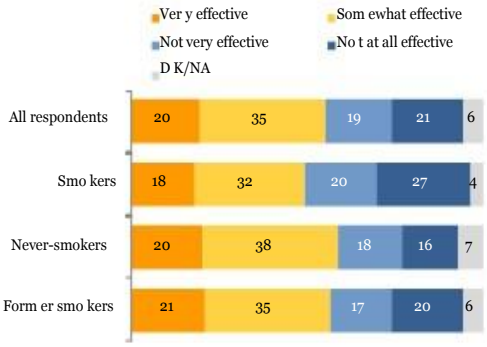
Although Belgium also uses pictorial warnings on tobacco packs, the Belgian respondents are more sceptical about the effectiveness of health warnings than the Romanian and British interviewees. Twelve percent of Belgian respondents think that adding a colour picture to the text-only health warning, illustrating the health effects of smoking, is very effective and 27% say that this is somewhat effective.

Results by respondents' characteristics

Respondents who have never smoked or who have quit smoking are slightly more optimistic about the effectiveness of adding pictorial warnings to text-only warnings on tobacco packs: half of the smokers think this is an effective strategy compared to 56% of the former smokers and 58% of those who have never smoked.

Younger respondents are also more likely to think that it would be effective to add a colour picture, illustrating the health effects of smoking, to a written warning (66% vs. e.g. 50% of the over 54s).

Effectiveness of pictorial health warnings on tobacco packs



Q8a/b. In your opinion, how effective would/has adding a colour picture illustrating the health effects of smoking been/ in strengthening the text-only health warning?
Base: all respondents in all countries with the exception of BE, RO and UK
% Total

Although manual workers appear to be more positive about the effectiveness of health warnings in general (see above), they are less likely to think that adding a pictorial warning would be effective (50% vs. 57% of employees).

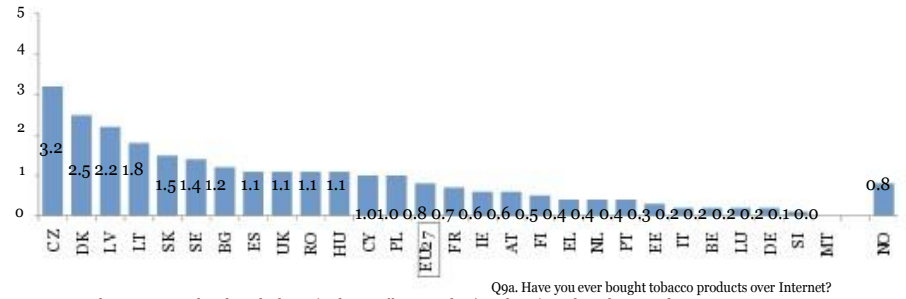
For more details, see annex table 17b.

6. Buying tobacco products over the Internet

Less than 1% of EU citizens surveyed have ever purchased tobacco products over the Internet. This percentage is slightly higher among respondents who have tried non-combustible tobacco products - 3% of them have bought non-combustible tobacco over the Internet and 2% have bought other tobacco products online.

Less than 1% of EU citizens have ever bought tobacco products online. Czech, Danish and Latvian interviewees are the most likely to have purchased tobacco products over the Internet - however, even in these countries only between 2% and 3% of respondents have experience buying tobacco products online.

Buying tobacco products over the Internet



Q9a. Have you ever bought tobacco products over Internet?
Q9b. Have you ever bought oral tobacco (such as snuff, snus or chewing tobacco) or other tobacco products over Internet?
Base: all respondents
% by country, "Yes" shown

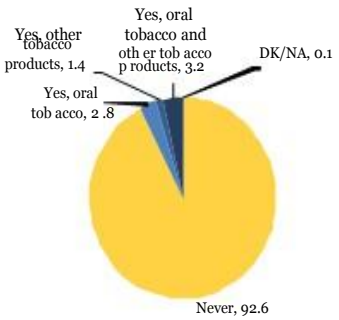
Among the respondents who use non-combustible tobacco, or who have tried it at least once, slightly more respondents have experience with buying tobacco products online: 2% have purchased non-combustible tobacco, 1% have bought both non-combustible tobacco and "other" tobacco products and 1% have only bought "other" tobacco products (see annex table 20a).

Respondents who use non-combustible tobacco at present time, either every day or occasionally, are the most likely to have purchased such products online: 3% have purchased non-combustible tobacco products and another 3% have bought both non-combustible tobacco products and "other" tobacco products.

The Internet sales of non-combustible tobacco products are concentrated in a number of countries. In Bulgaria, the Czech Republic and Latvia approximately one-tenth of the respondents, who use or have tried non-combustible tobacco, have purchased non-combustible tobacco online.

Buying tobacco products over the Internet

Base: Respondents who use oral tobacco



Q9b. Have you ever bought oral tobacco (such as snuff, snus or chewing tobacco) or other tobacco products over Internet?
Base: respondents who use oral tobacco every day or occasionally
% EU27

Note: since not more than one-sixth of the Bulgarian, Czech and Latvian respondents use or tried non-combustible tobacco and only a minority of them have actually bought tobacco products online, their proportion among all respondents is actually less than 3.5%.

For more details, see annex table 20c.

7. Buying tobacco products in other EU countries

One-tenth of EU citizens participating in the survey have bought lower-priced cigarettes in another EU country in the year prior to the survey.

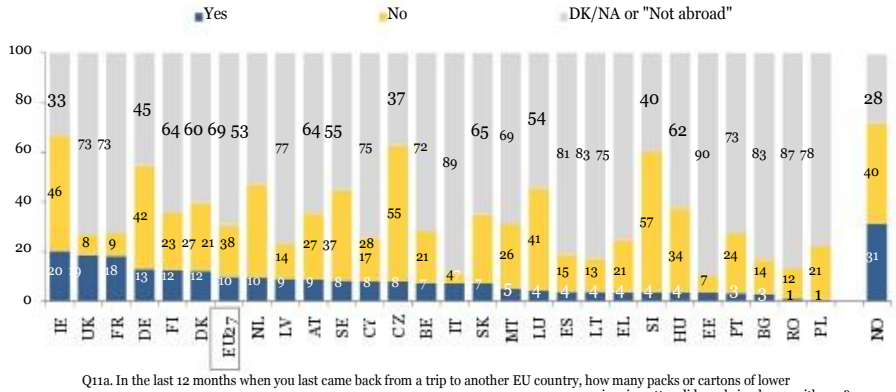
Among the respondents who made a trip to another EU country, one-third brought home lower-priced cigarettes; British, French and Italian respondents are the most likely to have done so (between 63% and 70%).

One-tenth of EU citizens surveyed have bought lower-priced cigarettes in another EU country in the 12 months prior to the survey. Note: approximately seven out of 10 respondents had not been abroad in the past year[10].

Respondents in Ireland, the UK and France are the most likely to have bought lower-priced cigarettes in another EU country: in these countries at least one-sixth of the respondents say they have bought cigarettes when returning from their last visit to another EU country in the year prior to the survey. In a majority (20) of all other Member States less than one-tenth of the respondents have done so - ranging from virtually none of the Romanians and Polish to 9% of the Latvians and Austrians. In Germany, Finland and Denmark slightly more than one-tenth of the respondents have bought lower-priced cigarettes when returning from their last visit to another EU country.

By comparison, three out of 10 Norwegians have bought lower-priced cigarettes when returning from their last visit - in the past year - to an EU country.

Purchasing of lower-priced cigarettes in other EU countries



Q11a. In the last 12 months when you last came back from a trip to another EU country, how many packs or cartons of lower price cigarettes did you bring home with you?
Base: all respondents in EU27 countries
Q11b. In the last 12 months when you last came back from a trip to an EU country, how many packs or cartons of lower price cigarettes did you bring home with you?
Base: all respondents in NO
% by country

The likelihood of buying lower-priced cigarettes when visiting another EU country

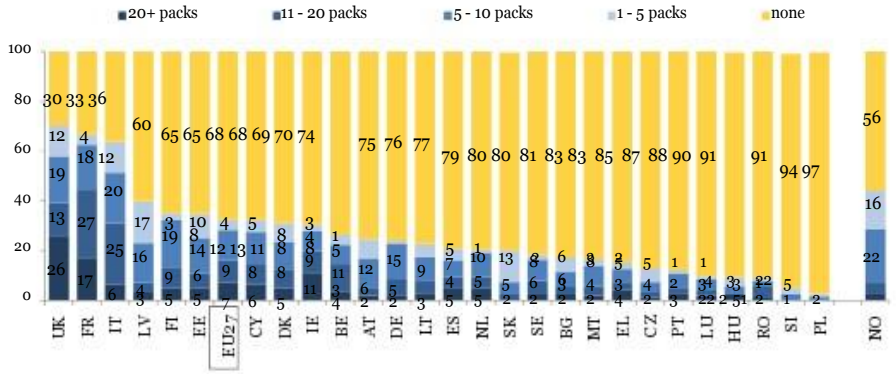
Focusing solely on the respondents who made a trip to another EU country, we find that one-third also brought home lower-priced cigarettes from that country: 7% bought more than 20 packs, 9% between 11 and 20 packs, 12% between five and 10 packs and 4% only bought between one and five packs.

In 18 Member States less than 30% of respondents, who made a trip to another EU country, bought lower-priced cigarettes in that country (ranging from 3% in Poland to 26% in Belgium).

10 Slightly more than one-third (36%) spontaneously answered they had not been abroad in the past year and one-third did not answer the question.

In the UK, France and Italy, however, more than half of these respondents bought lower-priced cigarettes (70%, 67% and 64%, respectively). In Latvia, Finland and Estonia, the proportion of respondents who brought home lower-priced cigarettes from a trip to another EU country is slightly higher than the EU average (40%, 35% and 35%, respectively). By comparison, 44% of the Norwegian respondents bought lower-priced cigarettes in an EU country.

Amount of lower-priced cigarettes brought home from another EU country



Q11a. In the last 12 months when you last came back from a trip to another EU country, how many packs or cartons of lower price cigarettes did you bring home with you?
Base: EU27; respondents who had made a trip to another EU country
Q11b. In the last 12 months when you last came back from a trip to an EU country, how many packs or cartons of lower price cigarettes did you bring home with you?
Base: NO; respondents who had made a trip to an EU country
% by country

The amount of cigarettes bought in another EU country

Respondents in the UK are the most likely to have bought more than 20 packs of lower-priced cigarettes (26%), while respondents in France and Italy are more likely to have bought between 11 and 20 packs (27% and 25%, respectively). Respondents in Finland and Estonia, on the other hand, are most likely to have bought between five and 10 packs (19% and 14%, respectively), while equal proportions of the Latvians bought from one to five packs (17%) or from five to 10 packs (16%).

Results by respondents' characteristics

Not surprisingly, smokers are a lot more likely to have bought lower-priced cigarettes in another EU country: 57% of the respondents who smoke - and who made a trip to another EU country - say they bought cigarettes when returning from their last visit to another EU country in the year prior to the survey compared to only 17% of respondents who do not smoke.

Women, the over 54s and those not working are less likely to have bought lower priced cigarettes in another EU country. For example, 23% of the over 54 year-olds bought cigarettes when returning from their last visit to another EU country in the year prior to the survey compared to more than a third of respondents younger than 55 (between 35% and 38%).

For more details, see annex tables 22c.

8. Contact with potentially smuggled tobacco products

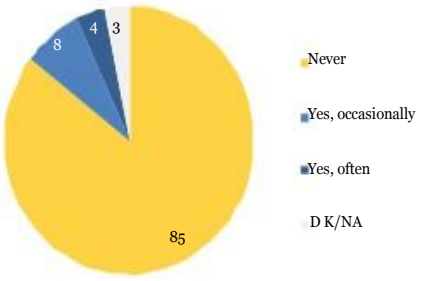
Over one-tenth of EU citizens (12%) have seen tobacco products being sold in the past six months which they think might have been smuggled into the country.

There are national variations, however: the proportion that has been in contact with potentially smuggled tobacco products in the past six months is the highest in Lithuania (36%) and the lowest in Belgium (4%).

Over one-tenth of EU citizens have seen tobacco products being sold which they think might have been smuggled: 8% say they saw such products occasionally in the past six months and 4% say this happened regularly.

The proportion of respondents who have seen potentially smuggled tobacco products being sold in the past six months is the highest in Lithuania (36% - 17% say this happened regularly), followed by Greece (25%), Poland, Hungary and Latvia (22%-24%).

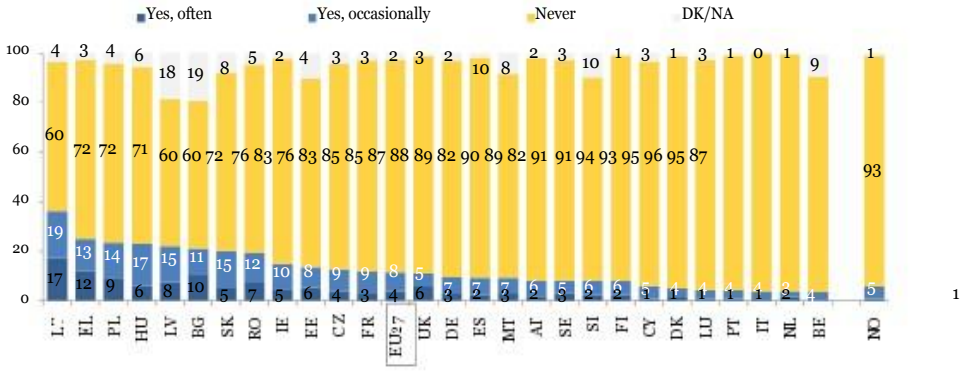
Contact with smuggled tobacco products



Q10. In the last 6 months, have you seen tobacco products being sold which you think were smuggled?
Base: all respondents
% EU27

In Belgium, the Netherlands, Italy, Portugal, Luxembourg and Denmark, on the other hand, not more than 5% of respondents have been in contact with potentially smuggled tobacco products in the past six months.

Contact with smuggled tobacco products



Q10. In the last 6 months, have you seen tobacco products being sold which you think were smuggled?
Base: all respondents
% by country

Results by respondents' characteristics

The proportion of respondents who answer that they have seen potentially smuggled tobacco products being sold in the past six months is higher among men (16% vs. 8% for women), younger respondents (16% of 25-39 year-olds vs. 8% of those over 54), those with higher levels of education (12%-13% vs. 7% of those with the lowest levels of education), city dwellers (16% in metropolitan areas and 12% in urban areas vs. 9% in rural areas), manual workers (18% vs. 10% of non-working respondents) and smokers (17% vs. 9% of non-smokers).

For more details, see annex table 21b.